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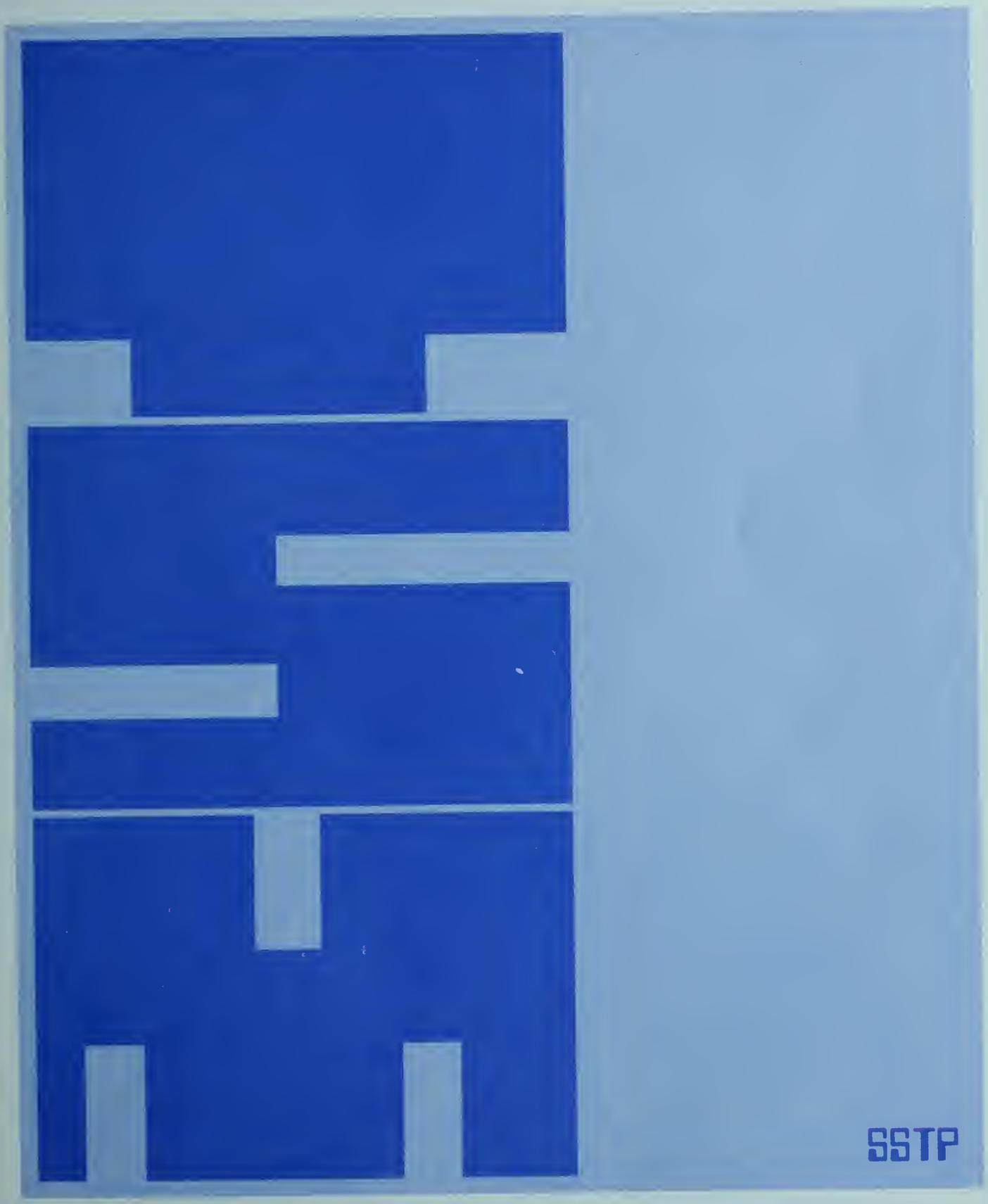
December 1981

TSM for Major Institutions:

San Francisco Experience



TSM for Major Institutions:

San Francisco Experience

Final Report
December 1981

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FOREWORD

Transportation System Management is a concept which seeks improvement in the efficiency and effectiveness of transportation systems through the implementation of low cost, operations-oriented actions. One place where these actions can be particularly effective is in the area of major employers. Where employers are faced with congestion, opposition to expansion from neighbors or a desire to assist their employees in getting to and from work, certain TSM actions, focused at the work site, can be particularly effective.

Often major institutions, such as hospitals and universities, are located such that problems of these types become acute. Such was the case in San Francisco where a number of major institutions were located in residential areas. This report describes the planning, design, implementation and evaluation of a program of employer-based TSM actions taken in San Francisco. The program resulted in significant reductions in single-occupant automobile use and concomitant congestion. We believe that institutions and other major employers facing similar problems, as well as planning organizations interested in promoting activities of this type, will find this report useful.

Additional copies of this report are available from the National Technical Information Service, Springfield, Virginia 22161. Please refer to UMTA-CA-09-9003-82-1 in your request.

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EXECUTIVE SUMMARY

In San Francisco twelve major institutions got together to try to reduce auto parking and traffic impacts by promoting ride sharing, improved public and private transit, supportive parking management policies, innovative marketing and joint cooperation between institutions. The Joint Instutional Transportation Systems Management (JITSM) Program, as it is called, resulted in a reduction from 57 percent to 49 percent in the number of drive-alone employees, and an increase of 30 percent in the number of employees who were ride sharing (p. 54).

Initiated in 1977, the participating institutions included colleges, hospitals, and a private employer. Many of these groups had run into citizen opposition to their growth or expansion, due to traffic congestion and parking shortages, demolition associated with building, and the sheer scale of their facilities. To help alleviate their problems, the organization established the Joint Institutional TSM Program. Each participating organization signed a formal letter of agreement, with the participation of their top management, designating a transportation broker responsible for implementing the program. The San Francisco City Planning Department also designated a project manager, serving as staff to the institutional group and responsible for technical development of the effort.

Where information on travel patterns was not available, participating organizations administered a thorough travel survey. This data, along with a series of recommendations developed by consultants, was used to develop a series of TSM plans for each institution, including traffic engineering improvements later discarded as well as marketing, incentive programs for ride sharing and transit, and specific program goals in terms of mode shifts.

A formal training program was initiated to educate and motivate the newly-designated transportation brokers. The session, which ran a half-day a week for ten weeks, covered other TSM programs, preferential parking, ride sharing, transit service, and promotional strategies (pp. 30-34). The brokers decided to form the Joint Institutional Transportation Brokers Association (JIBTA) to continue the contacts made during the course, and to share insights gained as the program proceeded.

JIBTA began lobbying for transportation improvements, including a shift in transit routes and drafted legislation for preferential parking for ride sharing (pp. 40-48). The brokers began providing individual assistance in setting up car and vanpools, with parking used as an incentive. Sales of monthly transit passes was also initiated, although no subsidies were provided.

The program, in a 1980 evaluation, was perceived as successful. Some 62 percent of the employees at the institutions were aware of the program. Despite increases in employment, there was a real decrease of 1,465 solo drivers to work. 70 percent of transit users now use a monthly transit pass. In addition, it was found that only about 20 percent of the brokers' on-the-job time was spent on the program once it was up and running. Overall, there was a significant shift in mode away from driving to other modes, particularly ride sharing.

Experience with the Joint Institutional TSM Program, considered with other such programs in the San Francisco Bay Area (pp. 62-73), indicates potential for the transfer of this experience to other areas. Key conditions for success are strong employer incentives to attend to the commuter trip, and accountability for program results. Limitations on the transportation system and political pressures seem to interact with labor market conditions.

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I. INTRODUCTION

Program Objective

In 1977-78, the City of San Francisco City Planning Department and a consortium of major institutions (hospitals, colleges, and a private insurance company) located in neighborhood areas within San Francisco developed the Joint Institutional Transportation Systems Management Program. A total of 12 institutions participated in the implementation of the full program, in 1979-80.

The objectives of this TSM program were to reduce auto parking and traffic impacts at each institution, by a variety of low-cost TSM measures including ride sharing, improved public and private transit, supportive parking management policies, innovative marketing technuqies, and joint cooperation between institutions.

This joint TSM program was the first of its kind in the country. Due to its success in achieving its objectives, it is a very productive model for other potential efforts around the country, particularly in this time of limited transportation resources.

Regional Context

The San Francisco Bay Area is the fifth largest metropolitan area in the country. The City of San Francisco serves as its center, with a congested city area of 49 square miles and a population of about 700,000. Several hundred thousand additional commuters come into the City daily. The Bay area as a whole, however, stretches from San Jose on the South to Sonoma on the North, and includes over 5,000,000 residents.

The Area economy has maintained a very strong base and positive growth rate, focusing on office growth in San Francisco's downtown and continued expansion of the electronics industry in the Santa Clara Valley. Continued economic growth, but with limitations on housing and transportation, has heightened employer interest in cobtributing to an improved employee commute. In those areas with strong competition for employees, and political pressures to lessen congestion, there has developed an interest in TSM, Commute Alternative programs.

In San Francisco, strong interest in the livability of neighborhood areas has strengthened the desire of both public and private decision-makers to explore alternatives to auto commuting. There is a strong tradition of transit use in the City, with a varied and hard-working set of transit operations.

The Joint Institutional TSM Program has been very successful in reducing commute auto trips and on-street parking impacts. In order to fully understand why, and to test its transferability to other areas, this report will compare the Joint Institutional TSM effort with three other Commute Alternative projects;

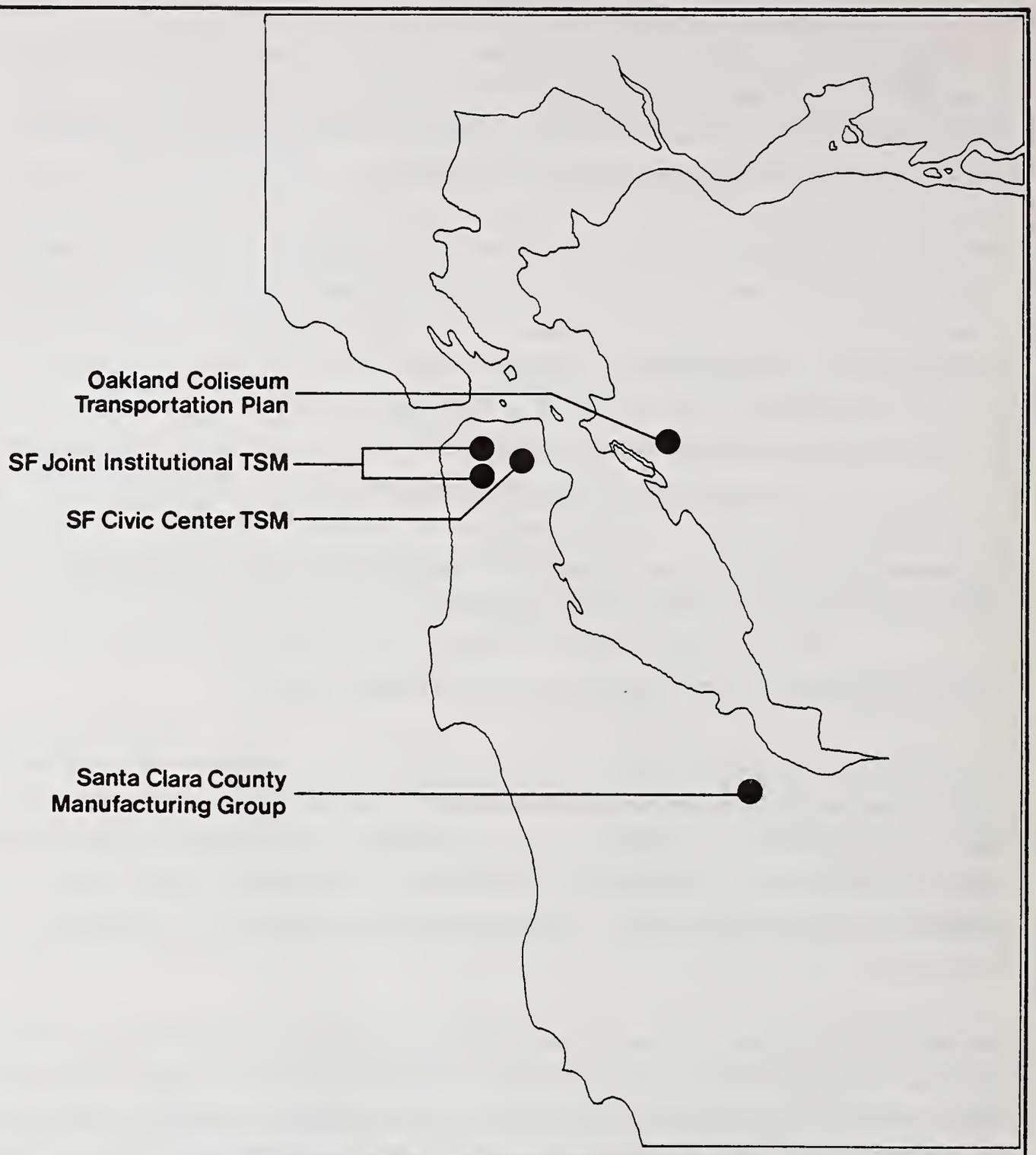
1. San Francisco Civic Center TSM Program
2. Oakland Coliseum Transportation Plan
3. Santa Clara County Manufacturing Group efforts.

The Location Map on page 4 indicates the relative locations of the projects within the Bay Area, and section VI. a. of this report will briefly describe and analyze those efforts vis-a-vis the Joint Institutional program.

Nature of Institutional Growth, and Conflict with Neighborhoods

Many of the hospitals, colleges and universities of San Francisco are located in neighborhood areas, outside the downtown core. Since San Francisco has historically been the center of the overall Bay Area, it has had a high concentration of institutions, especially hospitals. And since San Francisco is extremely limited in size, the neighborhood areas around these institutions are extremely built up and generally congested.

Hospitals and colleges, while providing outstanding public service, need like any other business to grow in order to maintain their competitive standing. Research must be conducted, new and expensive technologies must be installed, high quality personnel must be attracted. For hospitals, it is presently necessary to invest in medical office buildings in order to attract doctors. These constant struggles to remain competitive puts strong pressure on institutions to grow and expand.



Location Map - TSM Comparison Studies

North 0 5 10 20 Scale in Miles

Because of the unique quality of life and outstanding physical beauty of the San Francisco Bay Area, many residents of the City take strong personal interest in what happens to their neighborhood. Neighborhood political action groups (among the best organized in the country) felt that institutional growth was disruptive of their residential and neighborhood commercial areas, for three main reasons:

1. Many institutions have grown so physically large as to be out of scale with the predomonantly three-story buildings in most areas. Most hospitals and colleged were viewed is obtrusive and physically overwhelming.
2. Housing was being demolished in a city with a severe housing shortage and low vacancy rates. Wealthy institutions were buying up adjacent dwelling units and demolishing them in preparation for large-scale expansion.
3. Traffic congestion and parking shortages were being created in many neighborhood areas by the thousands of employees, students and visitors to these institutions. the amenities of residential living were being ruined by excessive traffic; parking on streets and in driveways congested many areas; and unsafe pedestrian conditions were being created.

Policital Pressures; Institutional Master Plans, Preferential Parking

These major conflicts led to a number of legal actions in the early and mid 1970's by various neighborhood groups against certain institutions, most notably St. Mary's Hospital and the University of California, San Francisco. Put simply, the neighborhoods won.

There were three major results of these skirmishes. They were the enactment of a Citywide Institutional Master Plan requirement, the development and implementation of neighborhood preferential parking, and the successful development and implementation of a UCSF TSM program.

The Institutional Master Plan requirement, passed by the San Francisco Board of Supervisors in 1976, provided that institutions of higher learning, hospitals and sanitariums had to file five-year plans with the Department of City Planning in 1977. Once a public hearing was held on each individual plan, no institution could file for a building permit for six months, and no permit could be granted unless it was for work

included within the institutional master plan. Further, the plans had to be updated every two years.

These requirements created an early warning system for neighborhood groups, and allowed the planning department to fully review the adequacy of each insitution's plans. As part of this review, the transportation section of the department analyzed the adequacy of the transportation portions on the plans.

Following the lead of a number of Eastern cities, San Francisco has implemented neighborhood preferential parking in a large number of neighborhoods around the City over the past several years. The plan is simple: in response to neighborhood petition, the Department of Public Works conducts a parking survey in that neighborhood; if the results meet a certain criteria, the area is posted with parking time limits, usually two hours; bona fide residents in the area receive stickers which exempt their cars from the time limit.

The implications of these programs for the institutions, in San Francisco, are strong. Since many are located in congested neighborhoods, parking is limited and many employees park on the streets. Additional off-street parking is expensive and a poor use of limited land resources, as well as an inadequate answer to traffic congestion. So, the half-dozen institutions faced with preferential parking at the inception of the Joint Institutional TSM Program had yet another incentive; find an alternative for employees who park on the street.

The combination of the City-required Institutional Master Plans and the neighborhood-requested preferential parking zones created a strong political combination to catch the attention of many institutions, and force them to attend to the issue of lowering the traffic and parking impacts of their employees, students and visitors.

University of California, San Francisco, Approach

UCSF provided an example to the other institutions of what an effective TSM-Commute Alternatives Program could looke like. In the mid-1970s, they lost on suits brought by local neighborhoods on the adequacy of their Environmental Impact Reports for proposed massive growth. As part of the settlement, they developed, under the direction of a

joint neighborhood/university/city board, an extensive program of low-cost activities designed to reduce the number of cars driven to their campus.

As a teaching medical center UCSF had all the usual problems of institutional commutes: irregular hours, around-the-clock shifts, limited parking, limited transit service, large size and traffic generation. The UCSF program has grown into a several-person transportation department which administers a variety of activities including ride sharing matching service and preferential parking, institutional vanpools, buspools, shuttle services, transit incentives, encouragement of cycling, strong parking management, broad marketing activities and a clear policy commitment by management. The net result has been a substantial shift in mode of travel by employees, students and visitors. Less than 50 percent of their employees drive alone to work. The University made a substantial commitment to their program, and got results.

Joint Institutional TSM Program Development

In early 1977, the initial institutional master plans were submitted. Many of the plans, noted similar traffic and parking problems. At the same time, San Francisco city College (CCSF) was endeavoring to add substantial parking to their campus, by decking over a nearby reservoir. City Planning staff objected, pointing out that additional parking might only serve to encourage additional driving, and that students parking in nearby residential areas would continue to do so, since the reservoir parking was further from the main classroom buildings.

Since CCSF and a number of other institutions shared the same transportation problems, a joint luncheon was organized in October of 1977 to explore common actions. Additional luncheons were held every two or three months during 1978 to firm up the program. A basic deal was struck; the institutions agreed to participate in and implement the program, the planning department agreed to develop and seek funding for the program.

A program was developed and submitted to the group for approval. Funding was sought from the Urban Mass Transportation Administration, and approved in the summer of 1978. The initial consultant contracts were awarded in the fall of 1978, and work begun in early 1979. During this time period the composition of the Joint Institutional Group

was finalized. Initially, 14 institutions agreed to participate. During the course of implementation two hospitals, San Francisco General Hospital and the Ralph K. Davies Medical Center, dropped out for various reasons.

The twelve insitutions that participated throughout the entire program were:

Colleges
City College of San Francisco
San Francisco State University
University of California, San Francisco
University of San Francisco

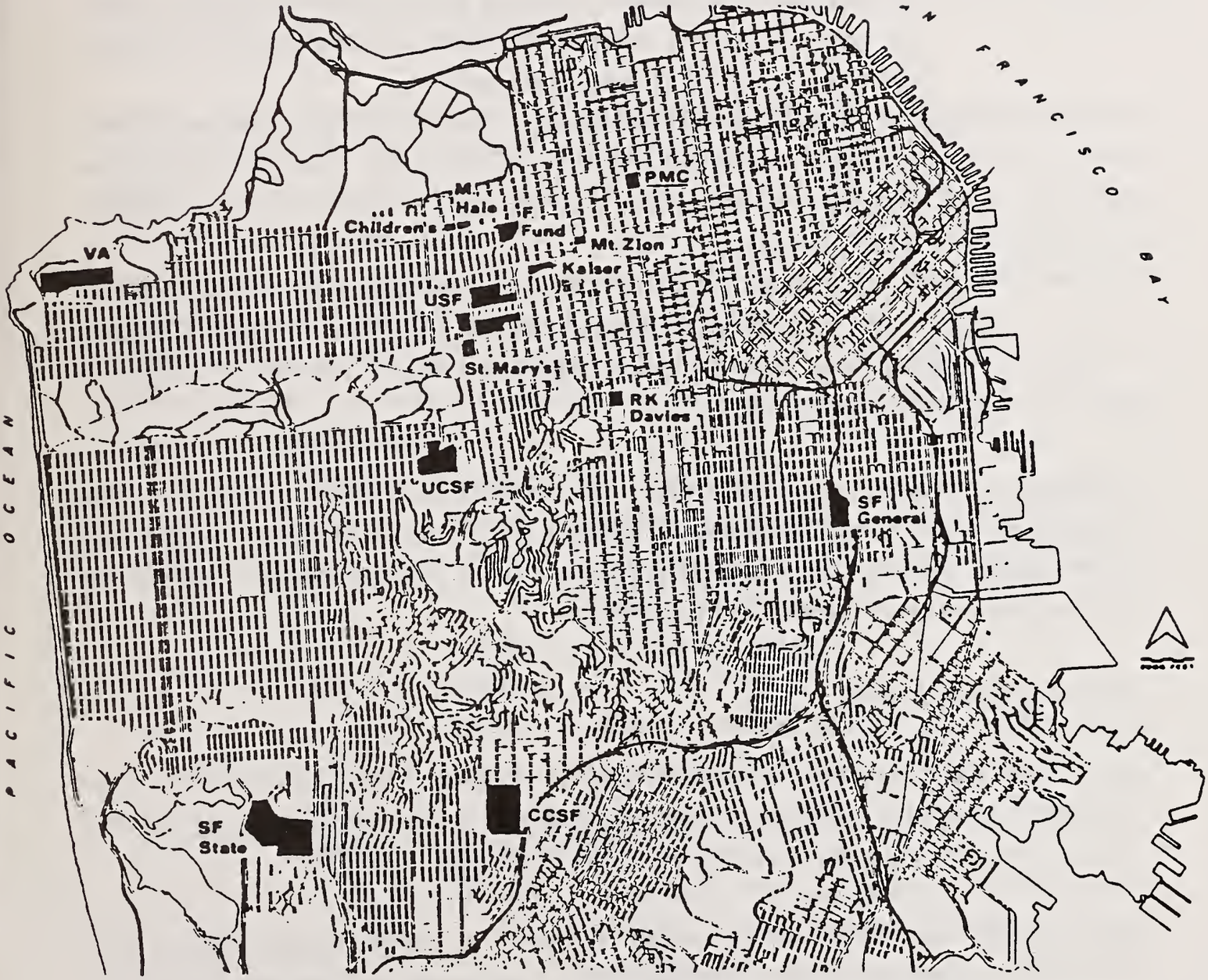
Hospitals
Children's Hospital
Kaiser Permanente Medical Center
Marshal Hale Memorial Hospital
Pacific Medical Center
St. Mary's Hospital and Medical Center
Veteran's Administration Medical Center

Private Employer
Fireman's Fund, Home Office

Exhibit 1, page 9, indicates the locations of the various participants in the Program. All are located outside of the downtown core area, all are located in neighborhood, predominantly residential areas.

There are several keys to program development. One was the degreee of public-private cooperation in the overall program. Public sources undertook to organize and fund the program, while the private institutions undertook to participate in and implement the program. Because both sides stood to gain politically, cooperation was fruitful.

Exhibit 1
LOCATIONS OF SAN FRANCISCO JOINT TSM INSTITUTIONS



Source: "Final Report of the San Francisco Joint Institutional Transportation Systems Management Study"; DeLeuw, Cather, et al; October 1979, Page 2, Figure 1.

Second, A clear, four-phase program was set up. The phases were:

phase 1. **Planning.** Each institution was surveyed, and a full TSM plan was developed for each separate participant, including specific goals for improvement.

phase 2. **Training.** Each participating insitution designated a transportation Coordinator, who was provided with a training manual and taken through a 12-week, part-time training course, concurrent with the completion of the planning efforts.

phase 3. **Implementation.** A Joint Transportation Brokers Association was developed as an outgrowth of the training class; the group met monthly to function as a mutual support group and trouble shooting forum.

phase 4. **Evaluation.** After a full year of implementation efforts, an "after" survey was conducted at all participating institutions; a clear, specific evaluation was done for each, reporting program results and suggesting future improvements.

Planning and training were completed, and implementation begun, during the gas shortage of 1979. Having the program developed and in place took excellent advantage of this global event, and also of local events such as the implementation of preferential parking areas around several of the institutions.

Institutional Obligations

Each participant institution had three specific requests made of them. First, that participation be with the support of top management and that strong good-faith efforts be made to implement the joint program.

Second, each participating institution designate a Transportation Broker (this designation has since evolved to Transportation Coordination or Commute Coordinator) responsible for implementing the program and dealing directly with fellow employees.

Third, each institution sign a formal letter of agreement spelling out the nature of their participation. Exhibit 2 on page 12 shows a sample letter which was provided to each participant as a guide.

Funding

On the public side, two main contributions were made to the program. First, a Project Manager was named, who served as staff to the institutional group as well as developing and managing the technical aspects of the program. This way the institutional group was a full participant in all decisions affecting the program, but City staff was resonsible for project work activities.

Second, full funding was secured for the project. While each of the institutions were responsible for the time and materials of their Transportation Brokers, the overall funding of the program effort was seen as a public responsibility. The regional transportation planning body, the Metropolitan Transportation Commission, was supportive of the program, and the Urban Mass Transportation Administration ultimately provided $163,000 for the program effort.
In-kind services of the brokers provided the local funding share many times over. In keeping with the four-phase development of the overall program, funding was broken down in the following manner:

phase 1.	**Planning;**	
	$94,000	planning consultant ($7,000 each for 12 individual TSM plans, $10,000 for an overall report)
	$10,000	project management
phase 2.	**Training;**	
	$5,000	assistance in development of a training manual and provision of classroom facilities
phase 3.	**Implementation;**	
	$14,000	to the Joint Brokers Association ($5,000 for the President quarter-time, $9,000 for joint marketing and other activities)
	$11,000	project management, development of a final report

Joint TSM Letter of Agreement

_____(Institution)_____ hereby agrees to participate in the San Francisco Joint Institutional Transportation Systems Management Program.

We will attend meetings of the joint group, and participate in decision-making. (You might wish to indicate who will be your representative.)

We will cooperate with and assist the consultant engaged by the joint group to develop a Transportation Systems Management Plan for our institution.

We will designate a Transportation Broker for our institution, who will be responsible for implementation of the TSM plan. That person will be available for one hald-day per week, over a three-month period, for a joint training class.

_____(Institution)_____ will make good-faith efforts in seeking to implement our TSM plan, including an annual evaluation of the effectiveness of our implementation efforts, utilizing the Transportation Broker/coordinator available to assist us with problem areas, and cooperating with relevant San Francisco City Agencies.

(You might also wish to indicate your understanding of the transportation impact your institution has on the surrounding neighborhood, and on the City, and how this joint program will improve this situation.)

phase 4. Evaluation;

$16,000	consultant preparation of 12 individual evaluations and an overall evaluation report

In addition, the city of San Francisco charged the project 9 percent for overhead and fiscal management fees. This amounted to $13,000.

II. PLANNING

Approach

A consultant team originally headed by De Leuw, Cather & Company and including DKS Associates, Jefferson Associates and Dr. Ira Fink was retained to produce the TSM planning documents. This effort, which took the first nine months of 1979, focused on producing a detailed TSM plan for each institution (as well as an overall plan) which could serve as a blueprint for action by the Transportation Broker.

Their approach to the situation included:

1. Compiling all available transportation and survey data relative to each institution.
2. Conducting employee transportation surveys at those institutions without current information.
3. Reviewing transit, parking, traffic conditions, and planned transportation improvements at each site.
4. Comparing this information to candidate TSM measures.
5. Developing realistic goals for mode shifts and congestion reduction.
6. Recommending appropriate TSM programs for each institution, which stressed practical, low-cost measures as well as areas for possible joint cooperation.

Their recommendations focused on six areas:

1. Public Transit
2. Ride Sharing
3. Parking and Traffic Management
4. Marketing and Incentives
5. Program Administration
6. Program Incentives

How these recommendations were translated into program reality will be discussed in the Implementation section.

Developing Background Data

Of the 14 institutions originally included in the program, seven had survey data and seven did not; the chart on page 17 details the situation.

A thorough travel survey was developed and administered at the seven unsurveyed insitutions. From this mass of data, some basic profiles emerged. The over-23,000 employees that the 12 institutions who participated throughout the program had were roughly divided 60-40 between San Francisco residents and suburban commuters; Exhibit 2 gives full details.

More important, the mode split for the institutions in total was:

drive alone	57 percent
ride share	17 percent
public transit	16 percent
walk, cycle	10 percent

As can be seen from Exhibit 3, only two institutions had less than 50 percent drive alone. They were the Fireman's Fund office, with a stable work force and day; and UCSF, with four years of TSM program experience.

Data Results

In addition to the simple employee location and modal split data, more detailed information was developed to properly analyze which candidate TSM measures were appropriate for each situation. Exhibit 4 displays information on transit routes and transit access to each site. Exhibits 5 and 6 show the parking characteristics, and relationship of proposed preferential parking districts to the various institutions.

Very detailed analyses of the various characteristics at each individual institution yielded a wealth of data on traffic, parking transit and ride sharing.

SURVEY RESPONSE RATES - 1979

	DATE	SAMPLE SIZE	RESPONSE
Previous Surveys			
Children	1978	902	75%
Kaiser	1978	451*	27%*
Mt. Zion	1977	764	38%
City College			
Faculty/Staff	1976	707	58%
Students	1978	17,202	70%
SF State			
Students	1973	1,000*	5%
UCSF			
Students	1977	NA	NA
Faculty/Staff	1978	357	30%
USF			
Students	1978	389	8%
Faculty/Staff	1978	394	33%
Current Surveys			
Marshal Hale	1979	369	90%
PMC	1979	1,164	70%
RK Davies	1979	369	40%
St. Mary's	1979	485	30%
SF General	1979	217	8%
Veteran's	1979	373	23%
SF State (Fac./Staff)	1979	950	25%

* Random sample of responses

NA: Not Available

TRAVEL SURVEY - 1979

Questionnaire Number: _____ /1-5

WORK INFORMATION

1. Please mark the classification that most closely describes your job.

Administrator, Management	1 ___	/6-7
Doctor	2 ___	
Nurse	3 ___	
Office Worker	4 ___	
Paramedical Staff	5 ___	
Professor, Teacher	6 ___	
Service Worker (Maintenance, Security, Dietary, Housekeeping, etc.)	7 ___	
Student	8 ___	
Volunteer	9 ___	

2. Are you employed full time? Yes 1 ___ /8 No 2 ___

3. How many years have you worked at your present location? ___ /9-10

4. What time do you usually start work? Hr. ___ /11-12 : Min. ___ /13-14 1 ___ AM 2 ___ PM /15

5. What time do you usually leave work? ___ /16-17 : ___ /18-19 1 ___ AM 2 ___ PM /20

6. Do you work a rotating shift (varying from week to week)? Yes 1 ___ No 2 ___ /21

7. Which days of the week do you usually work? (If your shift rotates, please indicate the days you work this week.)

Monday	1 ___ /22	Friday	1 ___ /26
Tuesday	1 ___ /23	Saturday	1 ___ /27
Wednesday	1 ___ /24	Sunday	1 ___ /28
Thursday	1 ___ /25		

8. Does your schedule change periodically (every few months)? Yes 1 ___ No 2 ___ /29

9. Do you usually work late at least once per week? Yes 1 ___ No 2 ___ /30

If yes, how many days a week? ___ /31

TRAVEL INFORMATION

10. How do you usually travel to work?

Drive Alone	1 ___	/32-33
Dropped off at Work	2 ___	
Carpool (Ride or Drive with 1-6 other People)	3 ___	
Vanpool (Ride or Drive with 7-14 other people)	4 ___	
Public Transit	5 ___	
Charter Bus (Buspool)	6 ___	
Motorcycle	7 ___	
Bicycle	8 ___	
Walk	9 ___	
Other _____	10	

11. If you carpool or vanpool, how many people, including yourself, are usually in the car? ___ /34-35

12. How many minutes does your trip to work take? ___ /36-38

13. About how many miles do you commute to work? ___ /39-40

14. What is the zip code at your place of residence? _____ /41-45

If unknown, please give the street corner nearest your home:

_____
Streets City

IF YOU DRIVE TO WORK ....

15. How many days a week do you drive? ___ /46

16. Where do you usually park?

Employer's garage or lot with permit	1 ___	/47
Employer's garage or lot without permit	2 ___	
Public garage or lot	3 ___	
Private garage or lot	4 ___	
On-street	5 ___	
Other	6 ___	

17. Do you pay to park? Yes 1 ___ No 2 ___ /48

If yes, how much? Daily $ ___ /49-50 . ¢ ___ /51-52
or Monthly ___ /53-54 . ___ /55-56

18. Do you use your car for work purposes during the day or after work? Yes 1 ___ No 2 ___ /57

How many days a week? ___ /58

19. Do you use your car for personal reasons during or immediately after work? Yes 1 ___ No 2 ___ /59

How many days a week? ___ /60

IF YOU USE TRANSIT FOR ANY PART OF YOUR TRIP TO WORK ....

20. Do you use ... (Check all that you use.)

Muni	1 ___	/61
BART	1 ___	/62
Golden Gate	1 ___	/63
AC Transit	1 ___	/64
SamTrans	1 ___	/65
Charter Bus	1 ___	/66
Southern Pacific	1 ___	/67
Other	1 ___	/68

21. If you use Muni, which routes do you use?

___ /69-70 ___ /71-72 ___ /73-74

22. Do you purchase a monthly transit pass? Yes 1 ___ No 2 ___ /75

23. How many transfers do you make on each trip to work? ___ /76

24. How do you get to the transit stop from home?

Drive	1 ___	/77
Ride in Car	2 ___	
Bicycle	3 ___	
Walk	4 ___	
Other _____	5	

Please indicate how satisfied you are with existing transportation to work:

	Very Satisfied	Satisfied	Neutral	Dis-satisfied	Very Dis-satisfied	No Opinion	
Amount of Off-Street Parking	1 ____	2 ____	3 ____	4 ____	5 ____	6 ____	/6
Location of Off-Street Parking	____	____	____	____	____	____	/7
Cost of Parking	____	____	____	____	____	____	/8
Parking Safety and Security	____	____	____	____	____	____	/9
Directness of Transit Service	____	____	____	____	____	____	/10
Frequency of Transit Service	____	____	____	____	____	____	/11
Hours of Transit Service	____	____	____	____	____	____	/12
Reliability of Transit	____	____	____	____	____	____	/13
Safety and Security of Transit	____	____	____	____	____	____	/14
Cost of Transit	____	____	____	____	____	____	/15

Please indicate whether you agree or disagree with the following statements:

DRIVING	I Agree	Don't Agree	Not Sure	This Doesn't Apply to Me	
I enjoy driving my car to work and prefer to make all my work trips that way.	1 ____	2 ____	3 ____	4 ____	/16
I would rather be a passenger in a car that drive.	____	____	____	____	/17
CARPOOLING					
I would consider joining a carpool if it met my schedule.	1 ____	2 ____	3 ____	4 ____	/18
I would consider joining a carpool if I got free parking.	____	____	____	____	/19
I would consider joining a carpool if a company car were available to me during the day.	____	____	____	____	/20
I need my car after work; a carpool would be too inconvenient.	____	____	____	____	/21
My hours are too variable; a carpool would be to inflexible.	____	____	____	____	/22

VANPOOLING

DEFINITION: A "vanpool is an arrangement where you or a fellow employee drives a van and 8-15 passengers to work and back. The driver pays nothing for the trip and is allowed to use the van for personal trips in the evenings and on weekends. The passengers share the cost of the trip, which is usually much less than the cost of driving alone.

	I Agree	Don't Agree	Not Sure	This Doesn't Apply to Me	
I would like to learn more about vanpools.	1 ____	2 ____	3 ____		/23
I would be interested in driving a vanpool.	____	____	____		/24
I would be interested in being a passenger in a vanpool.	____	____	____		/25
TRANSIT					
I use transit because I have no other way to get to work.	1 ____	2 ____	3 ____	4 ____	/26
Transit is convenient for my trip.	____	____	____	____	/27
I would use transit if it ran more often.	____	____	____	____	/28
I would use transit if I didn't have to transfer.	____	____	____	____	/29
If it met my schedule, I would use an express bus from:					
The East Bay Terminal	____	____	____	____	/30
A BART Downtown Station	____	____	____	____	/31
The Southern Pacific Station	____	____	____	____	/32
I would consider using transit if my employer paid part of the cost.	____	____	____	____	/33
I would use transit if I was sure I could get a seat.	____	____	____	____	/34
I feel it is not safe to use transit.	____	____	____	____	/35
The nearest bus stop is too far from my home.	____	____	____	____	/36
Public transit does not stop near enough to where I work.	____	____	____	____	/37
I would be interested in a charter bus that started in my neighborhood and ran non-stop to work.	____	____	____	____	/38
If my employer were able to arrange reduced rate parking at another location and provide a shuttle bus from the lot to work, I would make use of it.	____	____	____	____	/39

Exhibit 2
EMPLOYEE RESIDENCE LOCATIONS, JOINT TSM INSTITUTIONS, 1979

Employee's Place of Residence	San Francisco		North Bay		East Bay		Peninsula		Total	
	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.
Kaiser	1,060	60%	160	9%	250	14%	300	17%	1,770	100%
Marshal Hale	260	66	40	9	30	7	70	18	400	100
Mt. Zion	1,300	65	240	12	190	10	280	13	2,010	100
PMC	1,120	68	150	9	200	12	180	11	1,650	100
St. Mary's	1,040	63	160	10	200	12	240	15	1,640	100
Veteran's	910	55	200	12	180	11	360	22	1,650	100
Fireman's Fund	500	40	190	15	400	32	170	13	1,260	100
City College	670	55	150	13	120	10	270	22	1,210	100
SF State	1,520	49	430	14	250	8	900	29	3,100	100
USF	670	56	240	20	110	10	170	14	1,190	100
SUB-TOTAL (10)	9,050	57%	1,190	12%	1,930	12%	2,940	19%	15,880	100%
Children's	870	68	160	12	100	8	150	12	1,280	100%
UCSF	3,430	57	840	14	900	15	840	14	6,010	100%
TOTAL (12 Inst.)	13,350	58%	2,960	13%	2,930	12%	3,930	17%	23,170	100%

Source: "Final Report of the San Francisco Joint Institutional Transportation Systems Management Study"; DeLeuw, Cather, et al; October 1979, Page 10, Table 2. Note: Data for SF State and UCSF have been modified to account for new information about employment provided by these institutions since completion of the 1979 TSM study.

Exhibit 3
PRIMARY MODES OF EMPLOYEE TRANSPORTATION, JOINT TSM INSTITUTIONS, 1979

Mode of Transportation	Drive Alone		Share Ride		Public Transit		Other Walk,Bike		Total	
	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.
Kaiser	1,020	58%	430	24%	180	10%	140	8%	1,770	100%
Marshal Hale	225	56	60	15	80	20	35	9	400	100
Mt. Zion	1,340	65	100	5	480	25	90	5	2,010	100
PMC	860	52	230	14	390	23	170	11	1,650	100
St. Mary's	920	56	280	17	310	19	130	8	1,640	100
Veteran's	1,090	66	230	14	120	7	210	13	1,650	100
Fireman's Fund	530	42	490	39	190	15	50	4	1,260	100
City College	1,040	86	30	2	120	10	20	2	1,210	100
SF State	1,950	63	400	13	500	16	250	8	3,100	100
USF	610	51	260	22	210	18	110	9	1,190	100
SUB-TOTAL (10)	9,585	60%	2,510	16%	2,580	16%	1,205	8%	15,880	100%
Children's	750	59	200	15	200	16	130	10	1,280	100
UCSF	2,770	46	1,320	22	960	16	960	16	6,010	100
TOTAL (12 Inst.)	13,105	57%	4,030	17%	3,740	16%	2,295	10%	23,170	100%

Source: "Final Report of the San Francisco Joint Institutional Transportation Systems Management Study"; DeLeuw, Cather, et al; October 1979, Page 10, Table 2. Note: Data for SF State, Children's and UCSF have been modified to account for new information about employment and transportation modes provided by these institutions since completion of the 1979 TSM study.

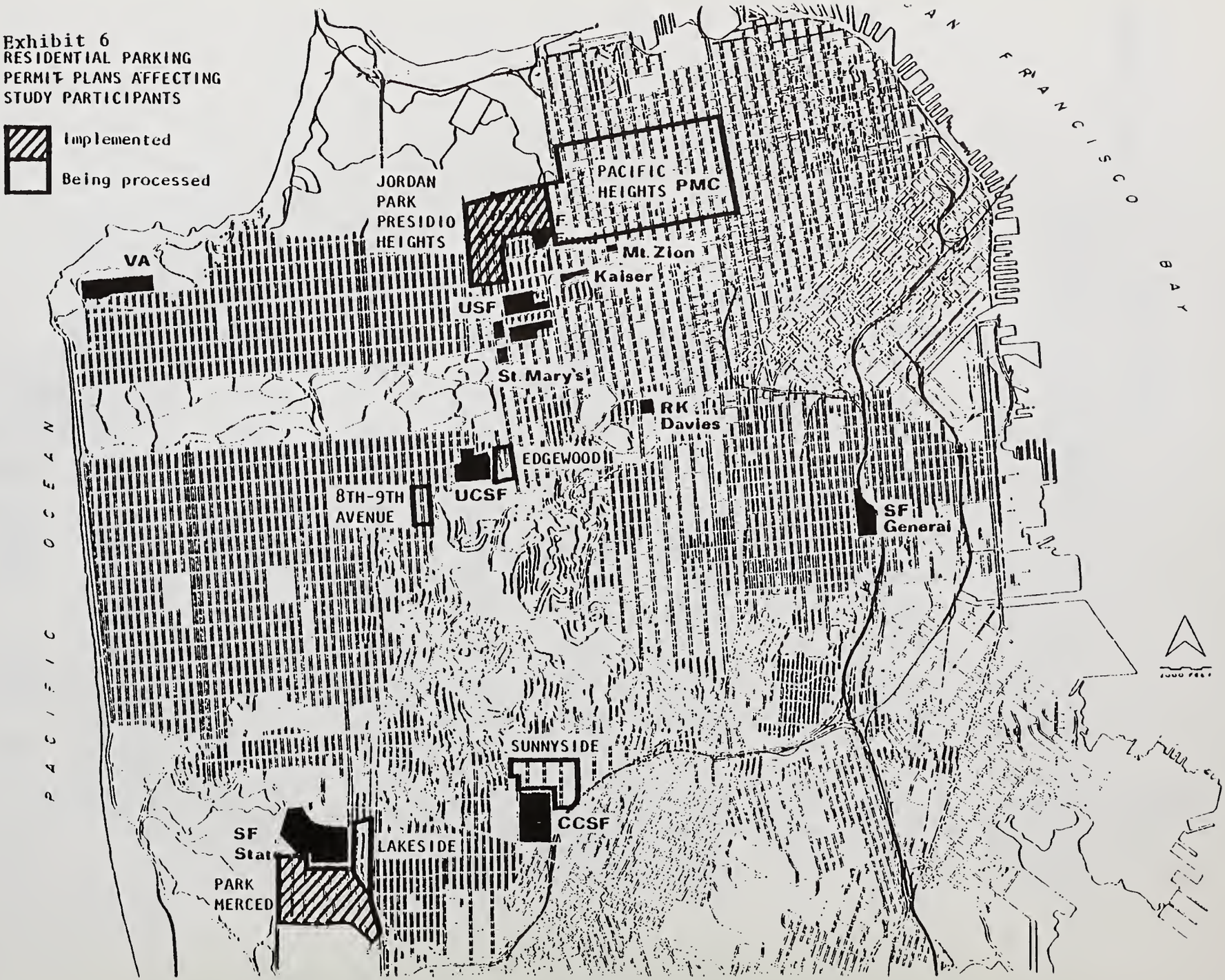
Exhibit 4
MAJOR TRANSIT SERVICES TO PARTICIPATING INSTITUTIONS

	Percent employees Who Use Transit	Percent Students Who Use Transit	Direct MUNI Routes	MUNI Connection to: BART	G.G.T.	A/C	SamTrans	SP
Children's	16	-	1-California 55-Sacramento	Fair-Direct, Slow	Fair-Out of Direct.	Fair-Slow, walk	Fair-Slow, walk	Remote
Kaiser	10	-	38-Geary 24-Divisadero	Good	Fair-Direct, Slow	Fair-Direct, Slow	Fair-Direct, Slow	Remote
Marsnal Hale	20	-	1 -California 55-Sacramento	Fair-Direct, Slow	Fair-Out of Direct.	Fair-Slow, walk	Fair-Slow, walk	Remote
Mt. Zion	25	-	1 -California 2 -Clement 3 -Jackson 24-Divisadero 38-Geary	Fair-Direct, Slow	Fair-Out of Direct.	Fair-Direct, Slow	Fair-Out of Direct	Remote
PMC	23	-	22-Filmore 24-Divisadero 25-Bryant 55-Sacramento	Fair-Direct, Slow	Good	Fair-Slow, walk	Fair-Direct, Slow	Fair-Direct, Slow
RK Davies	20	-	N -Judah 24-Divisadero 43-Masonic	Good	Fair-Out of Direct.	Fair-Direct, Slow	Good	Poor-Transfer Required
St. Mary's	19	-	5 -Fulton 21-Hayes	Fair-Direct, Slow	Fair-Out of Direct.	Fair-Slow, walk	Fair-Slow, walk	Remote
SF General	14	-	19-Polk 35-Eureka 47-Van Ness	Fair-Direct, Slow	Fair-Direct, Slow	Remote	Fair-Out of Direct.	Remote
Veteran's	7	-	2 -Clement 18-Sloat	Poor-Direct, Slow	Poor-Out of Direct.	Poor-Slow, walk	Poor-Slow, walk	Remote
Fireman's Fund	15	-	1 -California 3 -Jackson 2 -Clement	Fair-Direct, Slow	Fair-Direct, Slow	Fair-Slow, walk	Fair-Slow, walk	Remote
City College	9	54	K -Ingleside 12-Ocean 36-Miraloma 15-Third 31-Bacon 28-19th Ave.	Good-Walk	Fair-Direct, Slow	Fair-Direct, Slow	Fair-Slow, walk	Fair-Direct, Slow
SF State	16	26	M -Oceanview 26-Valencia 17-Park Merced 70-Lake Merced 72-Haight	Good-Direct	Poor-Out of Direct.	Poor-Slow, walk	Good-Direct	Remote
UCSF	21	12	6 -Masonic 66-Quintara N -Judah	Good-Direct	Poor-Out of Direct.	Fair-Direct, Slow	Fair-Slow, walk	Remote
USF	13	20	5 -Fulton 31-Balboa 43-Masonic	Fair-Direct, Slow	Fair-Direct, Slow	Fair-Direct, Slow	Fair-Direct, Slow	Remote

Exhibit 5
PARKING CHARACTERISTICS

	Number On-site Parking Spaces			Parking Fees					Percent Drivers Who Park On-street	
	Unrestricted open to public	Restricted	Total	Visitor (Hour)	Visitor (Maximum per day)	Employee (Monthly)	Student (Semester)	Physician (Monthly)	Employees	Students
Children's	365	155	520	$ .65	$2.65	--	--	Free	72%	
Kaiser	488	91	579	.25-1.00	7.00	$10.00	--	$10.00	24	
Marshal Hale	-	62	62	Free	Free	--	--	Free	95	
Mt. Zion	120	71	191	1.00	3.00	--	--	28.50	77	
PMC	160	316	476	1.10	2.50	22.50	--	Free	55	
RK Davies	169	121	290	.50	2.50	15.00	--	15.00	60	
St. Mary's	134	167	301	1.00	4.00	25.00	--	Free	71	
SF General	300	300	600	Free	Free	Free	--	Free	50	
Veteran's	750	250	1,000	Free	Free	Free	--	Free	2	
Firemans Fund	-	516	516	Free	Free	Free	--	--	20	
City College	-	1813	1,813	Free	Free	Free	$ 7.50	--	0	48
SF State	2,500	900	3,400	.25	.25	33/yr	15.00	--	25	43
UCSF	942	1,216	2,158	.50	2.50	18.00	--	18.00	44	71
USF	-	834	834	--	--	30/sem	28.75	--	38	85

Exhibit 6
RESIDENTIAL PARKING
PERMIT PLANS AFFECTING
STUDY PARTICIPANTS



Plan Recommendations

The recommended TSM plans for each institution were equally detailed. As mentioned previously, they focused on such traditional traffic engineering areas as physical improvements to parking and traffic flow, as well as marketing and incentive programs for encouraging ride sharing and transit. Taking into account such special factors as the irregular schedules of institutions, the non-downtown locations (which limited transit service), the extremely limited parking, each plan attempted to be as practical and cost efficient as possible. With the successful experience of UCSF as a model, the plans were recognized as ambitious, but do-able.

Overall, the plans provided a picture of present travel habits, present transportation resources, employee willingness to consider change in commute habits, specific TSM program elements to encourage those changes, and specific program goals to shoot for.

Goal Setting

A key element of the Joint Institutional TSM program was the setting of specific goals for improvement in mode split. Based on a combination of present circumstances, employee willingness to change, and good intentions, the goal setting served notice on the participating institutions that they would be held to account for their results.

While it was emphasized that it would take several years to reach these goals, it was also emphasized that a specific, numeric evaluation would be conducted after a year of implementation, and concrete results were expected.

Exhibit 7
INSTITUTIONAL GOALS

	DRIVE ALONE				SHARED RIDE				TRANSIT				OTHER*			
	EXISTING		GOAL		EXISTING		GOAL		EXISTING		GOAL		EXISTING		GOAL	
	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.
Kaiser	1020	58	670	38	430	24	650	37	180	10	310	17	140	8	140	8
Marshal Hale	225	56	120	30	60	15	120	30	80	20	125	31	35	9	35	9
Mt. Zion	1340	65	840	42	100	5	430	21	480	25	650	32	90	5	90	5
PMC	860	52	570	34	230	14	460	28	390	23	450	27	170	11	170	11
R.K. Davies	490	54	270	30	150	18	330	37	180	20	220	25	80	8	80	8
St. Mary's	920	56	640	39	280	17	510	31	310	19	360	22	130	8	130	8
S.F. General	1850	66	1340	48	170	6	340	12	390	14	730	26	390	14	390	14
Veterans	1090	66	980	59	230	14	310	19	120	7	150	9	210	13	210	13
Fireman's Fund	530	42	330	26	490	39	650	52	190	15	230	18	50	4	50	4
City College																
Faculty/Staff	1040	86	980	81	30	2	80	6	120	10	130	11	20	2	20	2
Students	5500	36	5000	32	400	3	700	5	8400	54	8600	56	1100	7	1100	7
S.F. State																
Faculty/Staff	1690	63	1500	55	350	13	520	20	430	16	450	17	210	8	210	8
Students	14700	61	13300	55	1400	6	2100	9	6200	26	6900	29	1700	7	1700	7
U.S.F.	4310	53	2440	30	1380	17	1380	17	1540	19	2190	27	890	11	2110	26

* Walk, Bicycle

III. TRAINING

Coordinator Selection

Other than the UCSF program, with three full-time transportation coordinators and support staff, and a full-time person with a planning background jointly hired by two hospitals, all of the transportation broker/coordinators were assigned to the program on a part-time basis. This background was typically in one of two areas: administrative assistant type people, usually from the personnel office, and parking and/or police type people.

It was expected that the quality of the broker/coordinators' work would depend on the quality and interest of the personnel. One of the challenges of the program was to motivate and educate the would-be coordinators, who generally fell into the $15,000 - $25,000 salary range and all of whom had no background in transportation.

Obviously, it would have been ideal for the institutions to hire full-time, experienced personnel. In an employment area and program area as new and untried as this one, however, the situation the Joint Institutional TSM Program encountered was more realistic; reliable but lower-level administrative personnel were asked to learn and implement the program.

Therefore, the training process was specifically aimed to both educate and motivate. Subsequent training activities in the San Francisco Bay Area and the Los Angeles area have borne out this approach as being realistic and successful.

Training Manual

In order to provide up-to-date reference material, a training manual was developed for the rogram. It was loose-leaf, with the materials coordinated with each class session; the emphasis was on providing specific, local and useful information such as transit maps and schedules, marketing material, information on regional ride sharing programs, and useful information on various parking programs. Some information on other successful programs around the country was included, as well as a number of articles on the general philosophy of TSM.

While this first effort at a manual did of necessity include readings that may have been dry and not sufficiently practical the manual did provide a reference guide for the fledgling coordinators. The concept of a manual with practical training and implementation information has since been updated by a number of other groups: the Santa Clara County Manufacturing Group produced a like manual in 1980, and is now graduating to a training film as well; the Metropolitan Transportation Commission developed a training manual (and classes) with all-new material based on the Joint Institutional experience; the Los Angeles-based Commuter Computer organizaton also put together training manuals and classes based on the practical Joint Institutional TSM experience. The MTC manual is probably the most up-to-date and effective; copies can be obtained from the Metropolitan Transportation Commission, Hotel Claremont, Berkeley, CA 94705.

Training Course

In conjunction with the manual, half-day training sessions were set up on Monday mornings for 10 weeks. Monday morning was chosen so as to get the would-be coordinators fresh and without other work preoccupations. A half-day a week for successive weeks was chosen, rather than in intensive several-day session, so that the motivational themes of the course could be repeated and absorbed.

Over the course of the training sessions, helped by the gas crisis, attention and understanding grew. Presentations were made by a wide variety of the speakers, each experts or more exactly practitioners of marketing, transit or ride sharing. The emphasis was on providing practical and usable information, and on problem solving and question answering. The following five pages indicate the course curriculum; speakers, readings and houndouts in class.

While 10 weeks proved to be overly long, the concept worked in an excellent fashion. Subsequent MTC six-week sessions seemed to be optimum.

Invariably, the first week or two there are a lot of blank faces as people are introduced to general concepts and success stories. As the practical ride sharing and transit information if offered, interest and knowledge increases. Marketing is the most intense session, and a homework assignment of developing a several-page work program outline

SAN FRANCISCO JOINT INSTITUTIONAL TSM TRANSPORTATION BROKER

TRAINING COURSE

SESSION #1: Monday, May 7

A. T.S.M. Philosophy and Background

1. San Francisco Program — Jon Twichell, Jon Twichell/Associates
   Reading: San Francisco Joint Institutional T.S.M. Program

2. Seattle-King County Program — William Roach, Executive Director Seattle-King County Commuter Pool Program
   Reading: Seattle-King County Commuter Pool Program

3. Other Programs — Jon Twichell, Jon Twichell/Associates
   Reading: a. Come Together
   b. TVA Incentive Program

B. Institutional Work Programs — Randy Hamilton, Dean, Graduate School of Public Administration Golden Gate University
   Reading: a. Chidren's Hospital
   b. Marshal Hale

SESSION #2: Monday, May 14

A. University of California, San Francisco, Model — Robert LaPointe, Jim Wood, UCSF
   Reading: UCSF T.S.M. Study
   Handout: Employee package

1. History
2. Mechanics
3. Results
4. Maintenance

B. Summary for Work Programs — Randy Hamilton, Golden Gate University

SESSION #3: Monday, May 21

A. Institutional Master Plans — Toby Rosenblatt, President, San Francisco City Planning Commission

1. City Ordinance
   Reading: City Ordinance 174-76

2. Guidlelines
   Reading: City Planning Commission Guidelines

B. Employee Transportation Committee — Robert LaPointe, UCSF
   Reading: UCSF Committee

1. Purposes
2. Establishment

C. Summary for Work Programs — Randy Hamilton, Golden Gate University

SESSION #4: Tuesday, May 29

A. Preferential Parking
   Reading: Preferential Parking for San Francisco

1. Neighborhood Concerns — Nancy Katz, Telegraph Hill Dwellers Association
   a. Telegraph Hill
   b. Current Activity
   Reading: (1) San Francisco Chronicle Article
   (2) Jordan Park-Presidio Heights Report
   (3) Park Merced Report
   c. Cooperation

2. Bureaucracy — Norman Bray, Department of Public Works
   a. Ordinance
   Reading (1) City Ordinance 312-76
   (2) Supplements
   b. Guidelines

B. Parking — Mark Winogrand, Al Lubliner, Department of City Planning
   Reading: a. The Restraint of the Automobile...
   b. Revisions to the Transportation Element...

1. City Philosophy
   Reading: Recommendations for City Parking
2. On-street and Off-street Parking
3. Garage
4. Off-site Parking

C. Summary for Work Programs — Randy Hamilton, Golden Gate University

SESSION #5: Monday, June 4

A. Carpooling — Frank Harris, RIDES
Reading: Masspool Handbook...
Handout: RIDES

1. General Information
2. Technology
3. Implementation

B. Vanpooling — Charna Staten, RIDES; Richard Ribner, Ride Sharing Office, Golden Gate Bridge District
Reading: a. Vanpooling...An Update
b. Rides Vanpool Fact Sheet
Handout: Golden Gate Bridge Vanpool

1. General Information
2. Technology
3. Implementation
Reading: a. Considerations in Implementing...
b. Vanpool Implementation

C. Discussion of Parking and Pooling — Cliff Chambers, Childrens' Hospital

D. Summary for Work Programs — Randy Hamilton, Golden Gate University

SESSION #6: Monday, June 11

A. San Francisco Transit

1. General Information — Robert Rockwell, Municipal Railway
Handouts: a. Regional Transit Guide
b. BART-Muni
Reading: Muni's SP Faresaver...

2. Schedules and Routes
Handouts: a. Muni Schedule
b. Route Map

3. P.O.M. Route Changes — Tom Matoff, Municipal Railway

3. Five Year Plan
Reading: 5-Year Plan 1979-1984

B. Summary for Work Programs — Randy Hamilton, Golden Gate University

SESSION #7: Monday, June 18

A. Buspooling
Reading: a. Guidelines on the Operation of Subscription Bus Services
b. Buspools

1. General Information — Michael Cassity, Bill Sullivan

2. Technology — Jim Drucker

3. Employee Bus Clubs — Jerry Papa, John Evans

B. Shuttles — Jack Arndt

1. General Information
2. Technology

C. Summary for Work Programs — Randy Hamilton, Golden Gate University

SESSION #8: Tuesday, June 26

A. Promoting the Program

1. Employees — Helen Sever, 3M Corporation
Reading: a. 3M Report
b. Sample Employee Handout
c. Pooling Promotion Materials
d. Excerpts from an Overview of Ridesharing...
Handout: Masspool

2. Management — Ira Fink, Ira Fink & Associates

3. Media Use

4. Employee Committees

B. Practice Sessions — Bill Dietrich, DKS Associates

C. Summary for Work Programs — Randy Hamilton, Golden Gate University

SESSION #9: Monday, July 9

A. Methods of Evaluating Insititutional Work Programs — Jon Twichell, Jon Twichell/Associates
Reading: Methods of Evaluation

1. Goals
2. Testing and Data Collection
3. Effectiveness
   Reading: TVA Incentive Program

B. Sample Work Programs — Cliff Chambers, Children's Hospital
   Reading: Children's Hospital
   Marshall Hale

C. Summary — Randy Hamilton, Golden Gate University

SESSION #10: Monday, July 16

A. Critique of Institutional Work Programs

1. Work Group Discussions
2. Conclusions

B. Summary of the Course — Jon Twichell, Randy Hamilton

for that coordinator's place of employment is presented the last week. This assignment forces people to attend to translating the materials into information they can use, rather than simply listening in class.

By this time coordinator knowledge and confidence is heightened, and they understand the value of the service they are providing to fellow employees and the public in general. They have become enthusiastic as well as educated.

Organization of the Coordinator Group

One of the most valuable products of the class was a determination by the coordinators to form their own on-going group, the Joint Institutional Transportation Brokers Association. Originally growing out of a desire to continue meeting on a monthly basis, to be a mutual support and trouble-shooting group, JITBA was quickly recognized as the answer to the question of how to fund and support the implementation phase of the project.

The self-help that JITBA members could give each other during the actual implementation of their respective programs was recognized as being more valuable than outside consulting services. One of the few full-time brokers was elected president, and one quarter-time was arranged for his work promoting JITBA goals.

In order to reinforce the self-help activities of the group, grant funding was made available for the development of joint marketing materials, and the president's time. Contact with City agencies and transit authorities was facilitated, but JITBA was in charge of work and decision-making.

IV. IMPLEMENTATION

Joint Institutional Transportation Brokers Association

With JITBA in place, the only major program development problem was solved...how best to facilitate energetic, as opposed to pro forma, implementation efforts. The psychological aspects of having a group like this were very important; instead of having an outside expert giving instruction, participants were able to address problems on their own. The mutual support system was performance oriented and results oriented.

Having 25 percent of the organization president's time available for the business of the organization was very helpful. Coordination between the member institutions and RIDES, the regional ride sharing organization, was greatly improved. Proposals for transit and parking improvements were promoted collectively, with greater political impact.

Mutual Support Group

One of the most important aspects of JITBA was the communications and mutual support network developed. Each coordinator took a certain pride in showing results for their workplace. But, since many had to face the same problems in encouraging ride sharing, coping with parking problems, implementing new policies, there was much intercommunication. Picking up the phone to ask a fellow broker how they had delt with a particular problem became the favorite problem-solving mode.

Successful approaches to problems were immediately adopted by other broker/ coodinators. Organizing a Transportation Day was recognized as an effective way of getting employees' attention, and joint carpools and vanpools became popular and productive.

Joint Marketing

The area of most concern to many brokers was marketing. . .how to get the message out, and how to get the attention of fellow workers.

Two particular approaches were recognized early on, and joint efforts developed to implement them. First was the importance of new employee orientation. Common in hospitals, these orientation sessions were quickly recognized as being very effective times to communicate with prospective employees. It stands to reason that new employees must attend to the commute trip, as they are starting a new travel pattern. Most coordinators scheduled themselves as part of the orientation presentations, and part of JITBA's budget was invested in a slide/sound show. Developed by a visual consultant under the direction of a JITBA committee, the original was seen and approved by the whole group, and individual copies made for each coordinator to use.

A second useful marketing tool was the previously mentioned Transportation Day; here was an interesting way to reach current, as opposed to new, employees. Again, JITBA invested in developing joint display panels, available to any of the coordinators. The festive atmosphere, various transit and handouts, as well as food, fun and giveaways, all combine to make a positive impression.

Joint Transit

As the implementation process proceded, three major transit improvements were identified as being needed adjucts to the program. JITBA began a process of unified lobbying for these improvements. It was felt that more impact was possible if all institutions were involved in this process than if institutions acted singly. All are in the approval stage. First was a shift in the route of Golden Gate Transit which would bring direct North Bay transit service to a half-dozen of the institutions. Another was charter buspool service from the South Bay. Collectively, several thousand employees could utilize the service and employee surveys conducted jointly by JITBA and the transit agency showed considerable interest.

A third was "reverse" express transit service within San Francisco. There are express buses oriented to the downtown, and a reverse express service would make quick and direct connections for East Bay commuters (whose service terminates in downtown San Francisco) available to about a half-dozen institutions. This service has been approved, but recent maintenance problems with the bus fleet has precluded implementation until the spring or summer of 1982.

An additional dividend of these negotiations was the development of contacts back and forth between transit agencies and the coordinators. Once those connections had been made, it was an easy matter to also develop the sale of monthly transit passes, additional bus stops or shelters, and a variety of other projects.

Preferential Parking for Ride Sharing

One of the more innovative JITBA projects has been the development of on-street preferential parking for ride sharing vehicles. Reasoning that if it is proper to limit parking of non-residents in residential areas, then it should also be proper to set up special parking zones for ride sharing vehicles on streets directly adjacent to institutions.

Taking a leaf from the preferential parking book, time limits are set up and special stickers issued only to bone fide institutional car or vanpools exempt those vehicles. This way ride sharing is rewarded using parking on the street, adjacent to the institutions.

The enabling legislation, written by JITBA, has been approved by the San Francisco Board of Supervisors, and the first parking zone. . .on a street between two of the member institutions. . .is about to be implemented at this writing.

PART II, CHAPTER XI, SAN FRANCISCO MUNICIPAL CODE (TRAFFIC CODE) BY ADDING ARTICLE 16 THERETO-AUTHORIZING THE PROCEDURES FOR AND THE ESTABLISHMENT OF SPECIAL PARKING ZONES FOR CERTAIN CLASSES OF MOTOR VEHICLES DISPLAYING VALID PERMITS AND PROHIBITING THE PARKING THEREIN OF CERTAIN OTHER CLASSES OF MOTOR VEHICLES, PROVIDING FOR A PENALTY AND PROVIDING FOR A SEVERABILITY CLAUSE.

Be it Ordained by the People of the City and County of San Francisco:

Section 1. Part Ii, Chapter XI of the San Francisco Municipal Code is hereby amended by adding Article 16 thereto, to read as follows:

CARPOOL PERMIT PARKING PROGRAM, ARTICLE 16

SEC. 401. Legislative Purpose.

This Article is enacted to encourage and promote carpool formation for commutes to or within the City and County of San Francisco. Because there is a need to decrease traffic congestion, to encourage the most efficient use of fuels, and to reduce the amount of commuter parking in residential areas, it is in the public interest to encourage the formation and continuation of carpools as an integral part of the public transportation system. In order to provide adquate parking for carpool vehicles, it is necessary to enact parking regulations which restrict unlimited parking around the perimeter of selected institutions while providing the opportunity for groups of three or more employees in a vehicle to park immediately adjacent to their place of employment.

For reasons set forth in this Article, a system of preferential carpool parking is enacted hereby for the City and County of San Francisco.

SEC. 402. Legislative Findings.

(a) General Findings. The Board of Supervisors finds, as a result of public input, evidence generated by professional consulting engineers and planners and derived from other sources, that a system of preferential carpool parking will serve to promote the formation of carpool groups, provide institutions with more employee parking, and thus promote the general public welfare.

(b) Specific Findings. The following specific legislative findings of the Board of Supervisors in support of preferential carpool parking are set forth as illustrations of the need compelling the enactment of this Article. They are intended as illustrations only and do not exhaust the subject of the factual basis supporting its adoption:

(1) The provision of convenient preferential carpool vehicle parking is an incentive to the formation of ridesharing groups.

(2) Certain institutions located in neighborhood areas lack adequte off-street parking facilities to provide preferential carpool parking on their premises.

(3) Parking demand is high at certain institutions and parking sillover onto neighborhood residential streets occurs.

(4) Many employees of large institutions within or immediately adjacent to residential permit parking areas have been displaced from all-day on-street parking. Some of these displaced employees do not have viable public transportation alternatives and have thus been forced to have their vehicles every two hours to avoid parking violations.

(5) The interest within the City and County of San Francisco for neighborhood residential permit parking programs will probably continue to grow such that additional program areas may be established. Thus the availability of all-day on-street parking for employees of institutions located within or immediately adjacent to these areas may be further reduced.

(6) The formation of carpool groups tends to reduce the total number of employee vehicles arriving at an institution. This tends to reduce spillover of institutional employees' vehicles onto residential streets which in turn serves to promote the general public welfare.

(7) Unrestricted on-street parking spaces adjacent to large institutions are often times used primarily by employees of these institutions.

(8) The Final Report of the San Francisco Joint Institutional Transportation System Management Study for the City and County of San Francisco completed by Deleuw Cather and Company in October, 1979, has recommended that on-street parking spaces immediately adjacent to several institutions should "be designated as high occupancy vehicle permit parking areas."

SEC. 403. Definitions.

(a) "Institution" shall mean a place of employment with more than 200 employees which is located in a neighborhood which is primarily residential and shall include but is not limited to such facilities as an accredited college, university, hospital or sanitarium.

(b) "Institutional perimeter area" shall mean a contiguous or nearly contiguous area containing public streets and highways or parts thereof which directly abuts upon property owned or leased by an institution.

(c) "Carpool vehicle" shall mean a motor vehicle parked within an institutional perimeter area in which three(3) or more occupants travel together to their place of employment. A carpool vehicle shall include a vanpool vehicle.

(d) "Carpool permit parking area" shall mean an institutional perimeter area designated as herein provided wherein carpool vehicles displaying a valid permit as described herein will be exempt from time restrictions established pursuant to this Article.

(e) "Carpool group" shall mean a group of three or more individuals who establish that they commute by motor vehicle to the carpool permit parking area.

(f) The masculine form, as used in this Article, if applicable as shown by the context thereof, will apply to female persons.

(g) "Motor vehicle" shall include an automobile, van, truck, or other motor-dirven form of transportation not in excess of 6,000 pounds gross weight.

(h) "Person" shall mean a natural person.

SEC. 404. Designation of Carpool Permit Parking Area.

The Board of Supervisors shall, upon recommendation of the Director of Public Works, consider for designation as carpool permit parking areas those areas immediately adjacent to an institution meeting and satisfying the objective criteria therefor established in this Article. It may, in its discretion, then designate by resolution, certain institutional perimeter areas as carpool permit parking areas as carpool permit parking areas in which employee vehicles displaying a valid parking permit may stand or be parked without limitation by parking time restrictions established by this Article. Said resolutions shall also state the applicable time limitation and period of the day for its application.

SEC. 405. Designation Criteria.

(a) An institutional perimeter area shall be deemed eligible for consideration as a carpool permit parking area if a parking study based on objective criteria establishes that the institutional perimeter area is eligible for carpool permit parking.

(b) In determining whether an institutional perimeter area may be designated as a carpool permit parking area, the Director of Public Works and the Board of Supervisors shall take into account factors which include, but are not limited to, the following:

(1) The extent of the desire and need of the institution's arrangement for carpool permit parking.

(2) The extent of the desires and needs of the institution's employees for carpool permit parking.

(3) The extent to which the institution has an active transportation system management implementation plan.

SEC. 406. Designation Process.

Upon receipt of application from the institution whose perimeter area is proposed for designation as a carpool permit parking area, the Director of Public Works, shall undertake or cause to be undertaken, such surveys or studies deemed necessary to determine whether the institutional perimeter area is eligible for carpool permit parking and to obtain information relative to those designation criteria listed in Section 504 of this Article. Such surveys and studies shall be completed within ninety (90) days of receipt of a petition calling for such surveys of petitions to be undertaken.

Within thirty (30) days of the completion of surveys and studies to determine whether designation criteria are met, the Director of Public Works shall notice as herein provided a public hearing or hearings in or as close to the neighborhood as possible on the subject of the eligibility of the institutional perimeter area under consideration for carpool permit parking. Said hearing or hearings shall also be conducted for the purpose of ascertaining boundaries for the proposed carpool permit parking area as well as the appropriate time limitation on parking and the period of the day for its application.

Notice of public hearing or hearings provided for herein shall be published in the official newspaper of the City and County at least ten (10) days before the hearing date and circulated generally in the neighborhood. The notice shall clearly state the purpose of the hearing, the location and boundaries tentatively considered for the proposed carpool permit parking area and, if applicable, the proposed permit fee to be charged therefor. During such hearing or hearings, any interested person shall be entitled to appear and be heard, subject to appropriate rules of order adopted by the Director of Public Works.

SEC. 407. Recommendation of the Director of Public Works.

Within sixty (60) days of the completion of the hearing or hearings conducted with regard to a particular institutional perimeter area, the Director of Public Works shall recommend by written report to the Board of Supervisors, based on the record of such hearing or hearings and the surveys and studies performed, whether to designate the area under consideration as a carpool permit parking area.

In the report of the Director of Public Works, he shall set forth the evidence generated as a result of surveys and studies performed, significant subjects and concerns raised at the public hearing or hearings conducted, the findings relative to those designation criteria listed in Section 405 of this Article deemed applicable to the carpool area and conclusions as to whether the findings justify preferential carpool parking for that articular area, the proposed boundaries of the carpool permit parking area, proposed time limitation and period of the day for its application, and a proposed number of permits to be issued for the amount of parking available.

The designaion process and designation criteria set forth in this Article shall also be utilized by the Director of Public Works and the Board of Supervisors in determining whether to remove designation as an institutional perimeter area.

SEC. 408. Carpool Group Application for Permit and Carpool Certification.

Application for a carpool parking permit and certification of a carpool shall be made in accordance with procedures established by the Director of Public Works after consultation with the institution's Transportation Broker of similar counterpart.

Group application for carpool permit shall be made directly to the institution's Transportation Broker or other designated representative. One application for a parking permit shall contain information sufficient to identify each carpool member, their resident addresses, the license numbers of the motor vehicles for which application is made, the place of employment and phone extention of each carpool

member, the shift time and such other information that may be deemed relevant by the Director of Public Works and the institution's Transportation Broker.

The certification portion of the group application shall include but is not limited to, signature of three or more individuals who certify that:

(a) They are in a carpool that commutes together to and from their place of employment.

(b) They each understand that parking in the designated restricted permit area can be allowed only when three or more individuals arrive to work in a certified vehicle.

(c) They understand that parking space availability cannot be guaranteed to permit-bearing certified carpool groups by either the institution or the City and County of San Francisco.

(d) Their place of employment is within a half-mile radius of the carpool parking permit area.

Upon receipt of the carpool group application, the Transportation Broker or other designated representative shall verify the facts of the application and determine whether to approve of or reject the application. Each permit application shall be subject to final approval by the Department of Public Works.

SEC. 409. Issuance, Cost and Duration of Permits.

Carpool parking permits shall be issued by the Director of Public Works to each carpool group applicant approved by the Transportation Broker or other designated representative. No more than one permit shall be issued to each approved carpool group.

The permits shall be designed by the Department of Public Works and shall state all the vehicles for which the permit shall be valid. The design of the carpool permit shall enable the permit to hang down from the rear-view mirror and be transferable among cars within the carpool.

The Director of Public Works shall issue such rules and regulations not inconsistent with this Article, governing the manner in which the permits are issued. The Director of Public Works shall also determine the most appropriate length of time such permits should remain valid at the individual institution.

Permits may be renewed at a pre-determined time with the completion of recertification procedures in the manner required by the Director of Public work. The recertification process for each carpool permit shall not be less than six months.

Schedule and amount of payment for said permits shall be decided upon by the Director of Public Works. In fee determination, consideration should be given but not limited to:

(a) The Department of Public Works' physical and administrative costs incurred in the carpool permit parking program involving that institution.

(b) Length of permit validity:

Payment for a carpool parking permit shall be made to the Department of Public Works either in cash or check after the application for said permit has been approved and before siad permit is issued.

SEC. 410. Posting of Carpool Permit Parking Areas.

Upon the adoption by the Boad of Supervisors of a resolution designating a carpool permit parking area, the Director of Public works shall cause appropriate signs to be erected in the area, indicating permanently thereon the time limitation, period of day for its application and conditions under which permit parking shall be exempt therefrom.

SEC. 411. Carpool Permit Parking Exemption

A carpool motor vehicle on which is displayed a valid carpool parking permit as provided for herein shall be permitted to stand or be aprked in the carpool permit parking area for which the permit has been issued without being limited by time restriction established pursuant to this Article. Said carpool motor vehicle shall not be exempt from parking restrictions or prohibitions established pursuant to authority other than this Article. All other motor vehicles, other than vehicles specified in Article 1.1 of this code, parked within a carpool permit parking area shall be subject to the time restrictions adopted as provided in this Article as well as the penalties provided herein.

A carpool parking permit shall not guarantee or reserve to the holder thereof an on-street parking space within the designated carpool permit parking area.

SEC. 412. Penalty Provisions.

It shall be unlawful and a violation of this Article, unless expressly provided to the contrary herein, for any person to stand or park a motor vehicle of a gross weight exceeding fifty pounds for a period exceeding the time limitations established pursuant hereto.

Said violation shall be punishable by a fine of not less than twenty dollars ($20.00) nor more than sixty dollars ($60.00), improsonment of not more than ten (10) days, or both.

It shall be unlawful and a violation of this Article for a person to falsely represent himself as eligible for a parking permit or to furnish false information in an application therefore submitted to either the institution or the Department of Public Works.

It shall be unlawful and a violation of this Article for a person holding a valid parking permit issued pursuant hereto to permit the use or display of such permit on a motor vehicle other than that for which the permit is issued. Such conduct shall consitute an unlawful act and violation of this Article both by the person holding the valid parking permit and the person who so uses or displays the permit on a motor vehicle other than that for which it is issued.

It shall be unlawful and a violation of this Article for a person to copy, produce or otherwise bring into existence a fascimile or counterfeit parking permit or permits without written authorization from the Director of Public Works. It shall further be unlawful and a violation of this Article for a person to knowingly use or display a facsimilie or counterfeit parking permit in order to evade time limitations on parking applicable in a carpool permit parking area. Upon conviction thereof, a person shall be punishable by a fire not exceeding five hundred dollars ($500) or be improsoned for a period not exceeding six (6) months, or both.

SEC. 413. Revocation of Permit.

The Director of Public Works is authorized to order revocation of the carpool parking permit of any person/group found to be in violation of this Article. Failure when so requested to surrender a carpool parking permit so revoked shall constitute a violation of law and of this Article.

SEC. 414. Severability.

The provisions of this Article are severable and if any provision, clause, sentence, subsection, word or part thereof is held illegal, invalid or unconstitutional, or inapplicable to any person or circumstance, such illegality, invalidity or unconstitutionality, or inapplicability shall not effect or impair any of the remaining provisions, clauses, sentences, subsections, section, words or parts of the Article or their application to other persons or circumstances. It is hereby declared to be the legislative intent that this Article would have been adopted if such illegal, invalid or

unconstitutional provision, clause, sentence, subsection, section, word or part had not been included therein, or if such person or circumstances to which the Article or part thereof is held inapplicable had been specifically exempted therefrom.

APPROVED AS TO FORM.
GEORGE P. AGNOST, CITY ATTORNEY

By_____
Deputy Attorney

DESCRIPTION APPROVED:

_____

Passed for Second Reading
Board of Supervisors, San Francisco

.....

Ayes: Supervisors Bardis, Britt, Horanzy, Kopp, Lawson, Molinari, Renne, Silver, Walker, Ward.

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Absent: Supervisor...Hutch.....

.....

.....Clerk

....
File No. Approved

Read Second Time and Finally Passed
Board of Supervisors, San Francisco

.....

Ayes: Supervisors Britt, Horanzy, Hutch, Kopp, Lawson, Molinari, Renne, Silver, Walker, Ward.

Supervisor:....Bardis.....

.....

.....

.....

I hereby certify that the foregoing ordinance was finally passed by the Board of Supervisors of the City of San Francisco.

.....Clerk

.....
Mayor Dianne Feinstein

"Real versus "Planned" Implementation

All of these joing activities, while interesting, innovative and productive, were really only frosting on the Joint Institutional cake. The heart of the matter was that the joint communication etwork of brokers allowed for the clarification of which TSM strategies were effective, and which were not.

As opposed to the suggested strategies in the planning documents, traditional traffic engineering approaches dealing with physical improvements such as channelization parking facilities or street work were not viewed as cost-effective, timely or productive. Strategies were quickly clarified into five main categories:

Transit

* On-site sale of monthly commute passes
* Availability of route maps, and schedules
* Personal trip planning assistance

Ride Sharing

* Personal assistance in getting carpools/vanpools together, and maintained
* Free or reduced rate, reserved on-site parking
* Joint institutional ride sharing where a pool cannot be formed at a single site

Parking Management

* Preference for ride sharing vehicles
* Increased rates for single occupant vehicles
* Limitations on increasing available parking

Marketing

* New employee orientation
* Transportation Day
* Transportation bulletin boards
* Continual use of in-house newsletter and other meand of regularly promoting program

Administration

* Emphasive personalized approach
* Coordinate all activities
* Regularly repeat all activities, including marketing, parking enforcement, ride sharing drives.

Two basic conclusions were reached. First, personalized service and direct human contact is a key to maximum program success. Computer printouts and ride boards do not provide the personal assistance and reassurance necessary for individuals to choose to change their commute habits. Second, results are a function of those individual choices, and are accumulated over time. All the major commute alternatives success stories are a function of a continuing program over several years of continuous effort.

In looking at the effective strategies, there was broad general agreement on their efficacy and the need to coordinate them collectively, rather than going for just one or two approaches. Under transit, simple on-site sale of monthly commute passes was much appreciated for its convenience. Subsidy of monthly passes was universally viewed as expensive and unnecessary by the institutions, especially since the Muni Railway pass, utilized by 70 percent of San Francisco transit users, already provides a substantial discount over daily fares. The key points under ride sharing were the personalized assistance in setting up and maintaining a pool, and the parking. Parking management was recognized as a tool for rewarding ride sharing with lowered rates and reserved spaces (parking is scarce in San Francisco) and not encouraging solo driving. Marketing was seen as a matter of new employee contact, and regular repeating of marketing efforts for regular employees.

Finally, program administration again emphasized a coordinated, multi-facted approach to the problem, and a commitment to the program over the long haul. Working together, as the JITBA members did, served to reinforce the individual efforts and individual results at each separate facility. The mutual support generated better overall results.

V. EVALUATION

Data Collection

In the fall of 1980, a full evaluation of the results of the program was conducted. The consulting firm of Ira Fink and Associates (who had worked on the planning phase of the program) with computer support from David Bradwell and Associates undertook the work. Two of the participating institutions had done their own evaluations, so the Fink/Bradwell work covered the remaining 10.

The clear specific nature of the evaluation was always viewed as one of the strengths of the program development; after all of the good words had been said, results. . .a "bottom line". . .had to be produced. The coordinators were reminded of this as the year of implementation progressed.

A single-page employee transportation survey was developed, printed and distributed at the 10 institutions. The response rates were as follows:

Institution	Number of Employees	Response Rate
Kaiser Permanente Medical Center	1,875	35.0%
Marshal Hale Memorial Hospital	400	56.8%
Mount Zion Hospital and Medical Center	2,200	15.6%
Pacific Medical Center	1,590	28.4%
St. Mary's Hospital and Medical Center	1,700	38.2%
Veteran's Administration Medical Center	1,450	26.5%
Fireman's Fund Home Office	1,250	55.3%
City College of San Francisco	1,500	14.5%
San Francisco State University	3,195	15.1%
University of San Francisco	1,110	35.6%
TOTAL/AVERAGE of Ten Institutions	16,270	27.7%

Employee Transportation Survey - 1980

1980/1

DEAR EMPLOYEE: We are cooperating with the City of San Francisco and with other large employers in efforts to improve transit and ridesharing opportunities to our workplace. We would appreciate your completing this questionnaire. This survey will help us measure the progess we have made toward encouraging alternatives to driving alone to work.

Please enter a checkmark ✓ in the box opposite the appropriate answer or fill in the numbers as needed for each of the following questions.

Please return the completed questionnaire to your department head. Thank you for your assistance.

---

1. PLEASE MARK THE CLASSIFICATION THAT MOST CLOSELY DESCRIBES YOUR JOB OR POSITION:
- ☐ Administrator, Management
- ☐ Office Employee
- ☐ Nursing Staff
- ☐ Paramedical Staff
- ☐ Physician
- ☐ Service Employee (Maintenance, Security, Housekeeping, etc.)
- ☐ Volunteer
- ☐ Professor, Teacher
- ☐ Student

2. WHAT IS YOUR PRESENT EMPLOYMENT STATUS?
- ☐ Permanent, Full-time Employee
- ☐ Permanent, Part-time Employee
- ☐ Temporary, Full-time Employee
- ☐ Temporary, Part-time Employee
- ☐ Other

3. HOW LONG HAVE YOU WORKED HERE?

_____(Number of Years) _____(Number of Months)

4. WHAT TIME OF DAY OR EVENING DO YOU USUALLY START WORK, OR WHAT TIME DO YOU START YOUR CURRENT SHIFT?

_____ : _____ ____AM ____PM

5. HOW DO YOU USUALLY TRAVEL TO WORK?
- ☐ Drive Alone
- ☐ Dropped-off at Work
- ☐ Carpool (Ride or drive to work with 1 to 5 other people)
- ☐ Vanpool (Ride or drive to work with 6 to 14 other people)
- ☐ Public Transit (SF Muni, BART, AC Transit,etc.)
- ☐ Charter Bus (Buspool)
- ☐ Motorcycle or Motorscooter
- ☐ Bicycle
- ☐ Taxicab
- ☐ Walk
- ☐ Other

6. HAVE YOU CHANGED YOUR MEANS OF TRANSPORTATION TO WORK WITHIN THE PAST YEAR?
- ☐ Yes
- ☐ No

7. IF YOU USE PUBLIC TRANSIT, HOW MANY TRANSFERS DO YOU MAKE ON EACH TRIP TO WORK?

_____(Number of Transfers)

8. IF YOU USE SF Muni, DO YOU PURCHASE A MONTHLY TRANSIT FAST PASS?
- ☐ Yes
- ☐ No

9. ABOUT HOW MANY MILES DO YOU LIVE FROM WORK?

_____(Number of Miles)

10. ABOUT HOW MANY MINUTES DOES YOUR TRIP FROM HOME TO WORK TAKE?

_____(Number of Minutes)

11. WHAT IS THE ZIP CODE AT YOUR PLACE OF RESIDENCE?

_____(ZIP Code)

12. IF YOU DRIVE TO WORK, WHERE DO YOU MOST OFTEN PARK?
- ☐ Employer's parking lot or structure with permit
- ☐ Employer's parking lot or structure without permit
- ☐ Private parking lot or structure
- ☐ Public parking lot or structure
- ☐ Metered parking on-street
- ☐ Unpaid parking on-street
- ☐ Other

13. ARE YOU AWARE OF TRANSPORTATION PROGRAMS (SHUTTLES, RIDESHARING, RIDESHARING PREFERENTIAL PARKING, OR OTHER COMMUTE ALTERNATIVES) SPONSORED BY YOUR EMPLOYER?
- ☐ Yes
- ☐ No

14. HAVE YOU RECEIVED INFORMATION FROM YOUR EMPLOYER ON THESE TRANSPORTATION PROGRAMS?
- ☐ Yes
- ☐ No

15. IF YOU PRESENTLY DRIVE TO WORK, WOULD YOU CONSIDER CHANGING TO A CARPOOL, VANPOOL, SHUTTLE, PUBLIC TRANSIT, OR BUSPOOL FOR YOUR TRAVEL TRIP TO AND FROM WORK?
- ☐ Carpool, Yes
- ☐ Vanpool, Yes
- ☐ Shuttle, Yes
- ☐ Public Transit, Yes
- ☐ Buspool, Yes

IF YOU ANSWERED YES TO THE ABOVE QUESTION AND WOULD LIKE MORE INFORMATION, YOU MAY LIST YOUR NAME AND WORK PHONE NUMBER AND YOUR EMPLOYER TRANSPORTATION BROKER WILL CALL YOU.

_____(Name) _____(Work Phone)

THANK YOU FOR COMPLETING THIS SURVEY. PLEASE RETURN THE SURVEY TO YOUR DEPARTMENT HEAD.

Despite the simplicity and directness of the one-page survey, computerization enabled 87 separate cross tabulations to be developed for each separate, as well as the overall, evaluation. Each coordinator received a copy of the respective results.

In addition to the survey, every coordinator was interviewed separately, and each evaluation included a report of their accomplishments. Once the narrative report and the survey results were combined, realistic suggestions for further gains and improvements were made.

Results - Mode Split

First consideration (Exhibit 8) was given a comparing the total employee population for 1979 and 1980, and comparing the employee residence locations (Exhibit 9). Both cases showed little change. The employee count increased a bit under 3 percent, while the location percentages remained virtually the same, with San Francisco maintaining 58 percent of the employee total. This last statistic is particularly interesting in the face of a 15 per cent turnover; 15 percent of all responding employees had been employed less than one year.

The mode split figures for 1980 showed dramatic changes. Overall, the percentage of drive-alone employees was reduced from 57 percent to 49 percent (see Exhibit 10). an even more interesting result was the increase in number of institutions with less than 50 percent drive alone. . .from two in 1979 to eight in 1980. In other words, the after-program results showed two-thirds of the participating institutions with less than 50 percent solo drivers.

The major beneficiary of the mode shift was ride sharing. Its share of market rose from 17 percent to 22 percent. . .an increase of 30 percent. Both transit and walk/cycle also showed increases as well.

Exhibit 8
NUMBER OF EMPLOYEES, JOINT TSM INSTITUTIONS

Number of Employees	1979	1980	Change
Kaiser Permanente Medical Center	1,770	1,875	+105
Marshal Hale Memorial Hospital	400	400	--
Mt. Zion Hospital and Medical Center	2,010	2,200	+190
Pacific Medical Center	1,650	1,590	- 60
St. Mary's Hospital and Medical Center	1,640	1,700	+ 60
Veteran's Administration Medical Center	1,650	1,450	-200
Fireman's Fund Home Office	1,260	1,250	- 10
City College of San Francisco	1,210	1,500	+290
San Francisco State University	3,100	3,195	+ 95
University of San Francisco	1,190	1,110	- 80
SUB-TOTAL 10 JOINT TSM INSTITUTIONS	15,880	16,270	+390
Children's Hospital	1,280	1,280	--
University of California, San Francisco	6,010	6,280	+270
TOTAL 12 JOINT TSM INSTITUTIONS	23,170	23,830	+660

Exhibit 9

EMPLOYEE RESIDENCE LOCATIONS, JOINT TSM INSTITUTIONS, 1980

Employee's Place of Residence	San Francisco		North Bay		East Bay		Peninsula		Total	
	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.
Kaiser	1,144	61%	169	9%	262	14%	300	16%	1,875	100%
Marshal Hale	268	67	32	8	24	6	76	19	400	100
Mt. Zion	1,474	67	198	9	264	12	264	12	2,200	100
PMC	1,001	63	191	12	223	14	175	11	1,590	100
St. Mary's	1,173	69	153	9	136	8	238	14	1,700	100
Veteran's	812	56	189	13	203	14	246	17	1,450	100
Fireman's Fund	501	40	162	13	425	34	162	13	1,250	100
City College	945	63	195	13	105	7	255	17	1,500	100
SF State	1,534	48	511	16	383	12	767	24	3,195	100
USF	644	58	200	18	111	10	155	14	1,110	100
SUB-TOTAL (10)	9,496	59%	2,000	12%	2,136	13%	2,638	16%	16,270	100%
Children's*	890	69	150	12	100	8	140	11	1,280	100
UCSF	3,354	55	879	14	1,005	16	942	15	6,280	100
TOTAL (12 Inst.)	13,840	58%	3,029	13%	3,241	14%	3,720	15%	23,830	100%

*Estimated

Exhibit 10
PRIMARY MODES OF EMPLOYEE TRANSPORTATION, JOINT TSM INSTITUTIONS, 1980

Mode of Transportation	Drive Alone		Share Ride		Public Transit		Other Walk,Bike		Total	
	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.
Kaiser	1,070	57%	330	18%	320	17%	155	8%	1,875	100%
Marshal Hale	180	45	80	21	80	21	60	13	400	100
Mt. Zion	1,080	49	400	18	550	25	170	8	2,200	100
PMC	700	45	290	18	400	25	200	12	1,590	100
St. Mary's	880	52	340	20	310	18	170	10	1,700	100
Veteran's	680	47	390	27	250	17	130	9	1,450	100
Fireman's Fund	410	33	570	45	220	18	50	4	1,250	100
City College	1,020	68	195	13	225	15	60	4	1,500	100
SF State	1,820	57	550	17	510	16	315	10	3,195	100
USF	470	42	200	18	270	24	170	16	1,110	100
SUB-TOTAL (10)	8,310	51%	3,345	21%	3,135	19%	1,480	9%	16,270	100%
Children's	570	45	300	23	250	16	160	10	1,280	100
UCSF	2,760	44	1,570	25	880	14	1,070	17	6,280	100
TOTAL (12 Inst.)	11,640	49%	5,215	22%	4,265	18%	2,710	11%	23,830	100%

Source: Employee Transportation Survey conducted by Ira Fink and Associates and David Bradwell and Associates, October 1980.
Note: Children's is based on the report "Children's Hospital San Francisco Transportation Improvement Program Evaluation", Wilbur Smith and Associates, June 1980, Table 2, Page 9.
UCSF is based on preliminary results of the "UCSF Faculty/Staff Housing and Transportation Survey, 1980", conducted by Ira Fink and Associates.

It is also worth noting that every institution made some progress, although the extent of progress varied greatly from institution to institution. Exhibit 11 indicates how much progress towards the goals laid out in the 1979 TSM plans was made, by each institution.

This variety of results is one of the indications that a variety of factors produced these results. While the gas situation served to catch the average employee's interest, the facts that a commute alternative program was in place, that management had made a commitment to implement those programs and that coordinators were available to personally assist workers in making a shift in commute mode worked together to produce the results. Some institutions where little hope was held out showed substantial gains, institutions with already-low drive alone mode shares showed even greater results, some institutions with substantial transit service and much potential for change showed very little result.

Results - Contributing Factors

Several of the cross tablulations showed valuable facts. For instance, the coordinators intuitively felt new employee orientation was most important; the survey results conformed this. New employees, in the first year of their employment, showed a 24 percent change in mode. Employees in the one to ten year category showed 20 percent change, and those with over 10 years on the job showed only an 11 percent change of mode.

Also, employee awareness of the program was high. . .62 percent average for all of the institutions. Those with the highest level of awareness showed the most change, and that institution with the lowest level of mode shift had the third lowest level of employee awareness of the program.

Several other numbers bear discussion. Despite an increase in employment there was a real decrease of 1,465 solo drivers to work. This specific, tangible number translated to a real physical change, as well as political accomplishment. In addition, 50 percent of those still driving to work indicated willingness to consider change to other modes. So, there was still a significant number of potential customers out there for the coordinators. And, the indication that 70 percent of transit users purchase a monthly

Exhibit 11

PROGRESS MADE BY 1980 IN REACHING THE TRANSPORTATION MODE GOALS SET FORTH IN THE 1979 TSM PLANS, JOINT TSM INSTITUTIONS, 1980

Transportation Mode	Drive Alone			Shared-Ride			Public Transit			Other (Walk,Bike)		
	1979	Goal	1980	1979	Goal	1980	1979	Goal	1980	1979	Goal	1980
Kaiser	58%	38%	57%	24%	37%	18%	10%	17%	17%	8%	8%	8%
Marhal Hale	56%	30%	45%	15%	30%	21%	20%	31%	21%	9%	9%	9%
Mt. Zion	65%	42%	49%	5%	21%	18%	25%	32%	25%	5%	5%	8%
PMC	52%	34%	45%	14%	28%	18%	23%	27%	25%	11%	11%	12%
St. Mary's	56%	39%	52%	17%	31%	20%	19%	22%	18%	8%	8%	10%
Veteran's	66%	59%	47%	14%	19%	27%	7%	9%	17%	13%	13%	9%
Fireman's Fund	42%	26%	33%	39%	52%	45%	15%	18%	18%	4%	4%	4%
CCSF	86%	81%	68%	2%	6%	13%	10%	11%	15%	2%	2%	4%
SF State	63%	55%	57%	13%	20%	17%	16%	17%	16%	8%	8%	10%
USF	53%	30%	42%	17%	17%	18%	19%	27%	24%	11%	26%	16%
AVERAGE (10 Inst'ns)	60%	—	51%	16%	—	21%	16%	—	19%	8%	--	9%
Children's	59%	—	45%	15%	—	23%	16%	--	16%	10%	--	10%
UCSF	46%	—	44%	22%	—	25%	16%	—	14%	16%	--	17%
AVERAGE (12 Inst'ns)	57%	—	49%	17%	—	22%	16%	--	18%	10%	--	11%

Source: (1979 and Goal) "Final Report of the San Francisco Joint Institutional Transportation Systems Management Study"; DeLeuw, Cather, et al; October 1979, Page 27, Table 7.
(1980) Employee Transportation Survey conducted by Ira Fink and Associates and David Bradwell and Associates, October 1980.

commute pass served to stengthen the desirability of selling those passes on-site. Finally, one interesting statistical is that in the 10 institutions which did not have a full-time coordinator, only about 20 percent of the coordinator's time was actually spent on TSM duties. So, once a program is developed and running, it need not be a full-time job.

To sum up, the evaluation clearly showed a significant shift in mode away from driving alone to a variety of other modes, primarily ride sharing. This shift occurred to varying degrees at all institutions, and had a tangible effect on reducing traffic and on-street parking in the neighborhoods in which the various participating institutions were located.

VI. CONCLUSIONS

Comparison Programs

In order to better understand the results of the Joint Institutional TSM Program, it is useful to compare it to other, like programs in the area. As previously mentioned, three other TSM programs have been selected for comparison:

* Civic Center TSM Program
* Oakland Coliseum Transportation Program
* Santa Clara County Manufacturing Group

A short narrative of each of these programs is included in this section. In addition, a matrix has been developed for comparing the conditions under which each of the programs, as well as the Joint Institutional TSM Program, was generated and implemented.

The function of the matrix, and of the comparison effort in general, is to isolate those factors that are crucial for success. Understanding these key factors can make for the development of a successful, transferable program format which can then be implemented in other areas.

MATRIX #1, JOINT INSTITUTIONAL TSM PROGRAM

Category	Result
1/ Setting the Scene	
a/ Genesis of Implementors	Special group for this program, developed from a series of public/institution lunches
b/ Specific Catalyst	Institutional Master Plans with commom transportation problems, City College conflict with neighbrohood and City re parking lot
c/ Specific Goals	Enumerated goals for reduction of employee drive-alones to institutional work sites
2/ Mechanics	
a/ Public/Private Mix	Strong; public provided funds and expertise, private provided in-house coordinators and implementation
b/ Funding	$163,000 in UMTA funds, larger amount in staff time and in-kind services
c/ External Factors	Severe; parking limitations, City and neighborhood political pressure, competitive employee recruitment situation
d/ Rewards and Punishments	Public provided funds and help; specific goals and fear of consequences of failure; 1979 gas crisis
3/ Implementation	Carefully organized and monitored; done by coordinator group with public oversight and assistance
4/ Results	
a/ Evaluation	Specific and thorough; numeric goals set and evaluated
b/ Future Outlook	Lower level of effort and results, coordinator turnover, need for some monitoring
c/ Some Conclusions	Economics and politics "right"; specific goals and obligation to perform essential; quality of coordinator very important

CIVIC CENTER TRANSPORTATION SYSTEMS MANAGEMENT PROGRAM

The San Francisco Civic Center area, at the fringe of greater downtown, has a concentration of over 13,700 City, state and federal employees housed in about a three-block area. While the modal split to this area is generally good (20 percent drive-alone, 20 percent ride share, 50+ percent transit, the remainder walk) there is room for improvement. . .especially among San Francisco residents and Peninsula residents.

Due to BART and the constrictions of the Bay Bridge, only about 10 percent of East Bay workers in the area drive; from the North Bay, Golden Gate Transit and bridge constrictions results in a 15 percent drive-alone figure. However, 25 percent of San Franciscans drive (the short-trip convenience coupled with transit crowding) and 30 percent of South Bay workers drive (lack of convenient, substantial transit).

In early 1978 senior management at the San Francisco Department of City Planning suggested that since institutional participation was required in the Joint Institutional TSM Program, the Civic Center should set a public employee example as well.

This suggestion was readily accepted, and preliminary mettings held with state and federal General Services Administration staff. The proposal wended its way through city bureaucracy, being approved by the Transportation Policy Group, the mayor's Transportation Cluster and finally by the Mayor.

It was agreed a Civic Center TSM Plan would be developed, and the California Department of Transportation District office cooperated in printing and processing a survey form. About 13,700 surveys were distributed, with a cover letter from the Mayor, and 30 percent response permitted the development of good "before" sample. Extensive parking and transit data was developed, and the Plan developed.

The Plan itself was thorough, and specific. A number of numeric goals were developed, costs for the various facets of the program were estimated, and a grant requested (and approved) by the California Energy Commission. Main facets of the plan included the printing of an area-wide transportation guide for employees, a ride-sharing program, transit improvements, parking limitations proposed, and a variety of employee benefits and marketing ideas proposed.

At this point, however, efforts broke down. Planners did what they do best, survey and plan, but implementation sputtered and was generally ineffectual. The City was unwilling to provide funds for a City transportation broker, due to the effects of Proposition 13, while state and federal efforts were somewhat more organized. Unfortunately, designation as a broker was perceived as an unpleasant, "do-gooder" task to be avoided if possible.

The developer of the program left City employ early in 1979, just as the year's work on the program culminated in the plan and grant approval. It then took 18 months to get implementation efforts started. Internal City Planning personnel were initially offered the job, but refused it. A consultant initially selected also turned down the work. Finally, a temporary staff person was hired and a small consulting contract let.

The main accomplishments were the development of a transportation guide, which was created, printed and funded privately by Chevron, and the setting up of a Transportation Day effort. No on-going efforts were developed, and most program impacts can be attributed to outside circumstances.

A number of things didn't work. Recommendations for transit route changes met with resistance. Apathy affected the designation and training of state and federally-designated transportation coordinators; those so designated attended some of the six-week training class sequence, but none completed it.

In the case of this program, there were no incentives for success or punishments for failure, and no sense of political or economic gain from the program. While the conditions, data collected and specific plan and goal setting were ideal, the follow-through was lacking.

MATRIX #2, CIVIC CENTER TSM PROGRAM

Category		Results
1/	Setting the Scene	
a/	Genesis of Implementors	Special Group for program only, participation requested by City
b/	Specific Catalyst	City desire to "set an example" for private employers
c/	Specific Goals	Reduction of drive-alones originating in San Francisco and Peninsula; enumerated goals, various items and projects
2/	Mechanics	
a/	Public/Private Mix	City, state, federal employees only; Chevron published guide
b/	Funding	$25,000 in California Energy Commission funds; majority went to support staff person. Guide developed and printed by Chevron.
c/	External Factors	Parking somewhat limited in area, high consciousness of commute alternatives, no incentives for change or to limit failure
d/	Reward and Punishments	Limited; no political pressure
3/	Implementation	Poor. Long delay in getting started, no in-house coordinators, poor cooperation between agencies
4/	Results	
a/	Evaluation	After survey presently being conducted, realization that results if any not related to program
b/	Future Outlook	None
c/	Some Conclusions	No incentives for success or to avoid failure; only accomplishment through Chevron. No self-interest equals no results.

COLISEUM AREA TRANSPORTATION PROGRAM

As a result of the gas crisis of spring, 1979, the Coliseum Area Industrial Complex Advisory Committee, a standing group of employers in the Oakland Coliseum, Airport and Fruitvale areas, sought to develop a transportation program for their area.

In Oakland the City government (primarily through the Office of Economic Development and Employment), the Chamber of Commerce and area employers work closely together. Adversity in their City has brought them together in an effort to improve the economic climate of Oakland. The CAICAC was originated in the mid-1970's to advise on an economic study in the area, and remained active, with a staff member of the Oakland Chamber of Commerce serving as Secretary to the group.

Once decided on a transportation study, the group requested and got City funding of slightly under $15,000 to conduct the study. A consultant who worked on the Joint Institutional TSM Program was hired, but the consultant's options were severely limited.

The employers group had made a previous decision that ride sharing would not work in the area, due to many small employers and a wide geographic spread. Since their concern was gas availability and price, their specific goal for the study was to improve transit accessibility in the area, through improvements to AC Transit and better connections to BART. There were none of the usual forcing functions, as most employers have off-street parking, no neighborhood groups pressing them, and the employers had no intention of "forcing" anything on their employees.

The consultant surveyed employers and some random sampling of employees in the area. Ten analysis zones were developed, and a series of transit and BART shuttle improvements proposed.

However, by the time the results were presented in the spring of 1980 the gas crisis pressures had passed. AC Transit assumed responsibility for implementing the suggested route and schedule improvements, but the employers were unwilling to fund their half of the shuttle costs, $7,500 a month (BART was willing to subsidize the other half). A combination of slower economic times, gas availability, an unwillingness to pass costs along to their employees resulted in the lack of implementation of the

shuttle. At the present time, over a year later, the building of a major office structure in the area has brought the shuttle issue up once more, with the developer of the office building taking a major role. Nothing has been resolved, however, as to who will fund the costs of the BART connector shuttle.

In this case, a strong public/private infrastructure was in place. However, goals were very limited and attitudes were closed about attempting a wider commute alternatives program. Limited goals led to limited results.

MATRIX #3, COLISEUM AREA TRANSPORTATION PROGRAM

Category	Results
1/ Setting the Scene	
a/ Genesis of Implementors	Employers group previously started in area
b/ Specific Catalyst	Gas crisis of 1979
c/ Specific Goals	Improve transit access to area for employees
2/ Mechanics	
a/ Public/Private Mix	Excellent; close cooperation between City of Oakland, employers, Chamber of Commerce
b/ Funding	Slightly under $15,000, Oakland OEDE
c/ External Factors	Very little; much off-site parking, no neighborhood pressure, no employee recruiting problems
d/ Rewards and Punishments	Limited; gas crisis passed, close cooperation of City, lack of strong pressure for implementation
3/ Implementation	AC Transit implemented transit changes on their own, shuttle not funded by employers group
4/ Results	
a/ Evaluation	None
b/ Future Outlook	Possible implementation of the shuttle, due to office building pressures on transportation system
c/ Some Conclusions	Limited goals led to limited results; group unwillingness to consider ride sharing or to fund the shuttle indicates a lack of pressure to change

SANTA CLARA COUNTY MANUFACTURING GROUP

The Santa Clara County Manufacturing Group, a Chamber of Commerce-type organization composed primarily of electronics and defense firms doing business in Santa Clara in and around San Jose, California, was formed in 1978. Generated originally by David Packard, Chairman of the Board of Hewlett-Packard, one of the largest firms of its type in the area, the specific goal of SCCMG is to have impact on public policy in those areas which relate to the problem of getting employees into the Santa Clara Valley.

As of August, 1981, SCCMG had 78 members representing 180,000 employees. SCCMG has focused on three main policy areas. . .housing, transportation and energy. Because of the rapid growth of their industry, the difficulty of finding housing and commuting to and from work have become real constraints to continued growth of the electronics sector of the economy.

The SCCMG board of directors has a transportation committee, which in turn oversees a Transportation Task Force of middle and upper management-level executives. The Task Force is chaired by a Vice President of Lockheed Missiles and Space Co.

The gas crisis of 1979 sharpened the issue of commute transportation but the primary realization of the group was that no more freeways could be expected to be built in the area, and that commute alternatives were the only alternative.

There has been a focus on both public and private approaches. In the public area the SCCMG has supported TSM-type measures, especially HOV lanes and improvement in express bus capabilities by the local transit operator. In the private area, the focus has been on developing a full-scale commute alternatives program.

A 10-zone system has been developed, to focus on the various areas, or zones, where major employer destinations are clustered. Within these zones, a zone manager is appointed. This is both a lead company, and a lead transportation coordinator who then takes responsibility for training and on-going group meetings of all the coordinators in that zone.

SCCMG continues to focus on developing a strong, on-going infrastructure. Since there is a long-term management commitment to SCCMG, this commute alternative program is currently more interested in building long-term commitment to the coordinator approach to the problem, than in immediate, specific results. The general commute picture is unclear, but it is estimated that 20-30 percent of the work force in the Valley uses some form of commute alternative. Due to the temperate climate, there are a surprisingly high number of cyclists, as well as ride sharing and transit users.

SCCMG recognizes the need to document the efforts of their member companies (a number of which have extensive in-house programs), as well as do survey work to set a baseline for measuring future change.

The primary work effort over the first year of this program has been securing the designation of coordinators, the development of training manuals, classes and videotapes. The major thrust at this time is to strengthen weak programs, bring coordinator capabilities all up to a certain minimum level. so, infrastructure is the focus at this time rather than specific results. Evaluation of the program and specific goal-setting will be accomplished within the next year or so; the new vice president of SCCMG is a ride sharing consultant, a professional hired primarily to work with the commute coordinator program.

The main results of the program so far, as a solid structural foundation is built, have been in the communications area. SCCMG is a new political player in the transportation policy and implementation process, and all are getting used to that role. And, the coordinator network facilitates communication with the transit operator, who now has a key group to talk when they are changing transit routes, schedules or levels of service. Due to the growth in the area, there are plenty of transit changes going on all the time.

The SCCMG program is very interesting, since it is a totally privately sponsored program designed to imbed the transportation coordinator concept, and build a strong, long-term structure that is capable of making real change in the commute habits in Santa Clara Valley. Whether, once the structure is properly in place, significant, quantifiable gains will be made remains to be seen. While the external factors affecting this program are primary road system limitations rather than parking limitations, the understanding and long-term employer commitment is there, and the economic climate continues to be very supportive of eventual success.

MATRIX #4, SANTA CLARA COUNTY MANUFACTURING GROUP

Category	Results
1/ Setting the Scene	
a/ Genesis of Implementors	Private employer group specifically created to impact public policy, especially transportation
b/ Specific Catalyst	Realization of labor market problems by key actors
c/ Specific Goals	At present, to solidify in-house coordinator structure
2/ Mechanics	
a/ Public/Private Mix	Private employer group
b/ Funding	Totally private support
c/ External Factors	Roadway and total transportation system constraints in handling commute traffic load; much on-site parking, little neighborhood pressure
d/ Rewards and Punishments	Main focus continued viability of the industry, recognition of key role of commute transportation
3/ Implementation	Strong focus on upgrading zone structure, developing high level of coordinators and coordinator interaction
4/ Results	
a/ Evaluation	Essentially none; first focus is structure, no specific goals or evaluation of those goals yet
b/ Future Outlook	Groundwork is there for excellent long-term program, but results will need to be shown in the near future if program is to maintain realistic momentum
c/ Some Conclusions	Great promise for long-term program and results, but needs to shift to producing specific results, specific impact on commute mode

Some Comparisons

While all four of the TSM programs examined were joint commute alternative efforts in the San Francisco Bay Area, oriented towards the employer (public or private) being the point of program contact, the differences in the programs provide keys for comparing the results.

Given the Civic Center TSM experience, it may be concluded that without extremely strong management commitment, public employee programs are not likely to be very successful. Only with this kind of support and commitment can sufficient attention to the program can be ensured.

Two conditions seem prerequisites for success. First, there needs to be strong employer incentives to attend to the commute trip. If there are limits on the expansion of a particular industry, if there is a competitive labor market, then the incentives are there. This was true both in the case of the Joint Institutional Program, especially hospitals chronically short of nursing personnel, and in the case of the Santa Clara County Manufacturing Group, which needs to continue to attract skilled engineering and manufacturing personnel to their area.

Secondly, there needs to be accountability for program results. One of the strengths of the Joint Institutional Program was its specific mode shift goals and the threat of problems with the City Planning Commission if there were no progress towards those goals. The challenge for the Santa Clara program will be the development and implementation of specific mode shift goals, and clear evaluation of the results.

Generally, comparison of the matrices indicates the need for outside factors to exist to generate a successful program. The "external factors". . .limited parking, limited road space, neighborhood/political pressures. . .must be there in one form or another. Limitations on the transportation system and political pressures seem to interact with labor market conditions.

Specific goals and evaluation of the results interact with the necessity of roduce results. 'Improve transportation" is a hopelessly fuzzy goal; by attacking mode shift and traffic congestion on a specific goal-oriented level, genuine results can be accumulated.

So, the primary points derived from this comparison of four commute alternative programs in the Bay Area are:

1/ Competitive labor market conditions are strong factors in success.

2/ There need to the penalties for failure.

3/ Limitations on the transportation system and/or political pressures interact with labor market conditions.

4/ Specific, quantifiable goal setting and clear evaluation of results intereact with penalties for failure.

The "Ideal" Program

Because of its complex, joint nature, dealing with institutions with irregular work schedules and neighborhood locations, the results of the Joint Institutional TSM Program are all the more remarkable. What are the lessons learned?

Starting with the general conditions noted above, the specific conclusions, those factors which would contribute to an ideal program, deserve to be reiterated.

First, the personal approach to commute alternatives cannot be emphasized too much. It is essential that a company Transportation Coordinator be designated, and that person deal in a face-to-face manner with fellow employees. The job of that coordinator is to facilitate personal choice and changes in commute mode.

Next, a clear program structure. . .with specific goals. . .needs to be set up. A Letter of Agreement or a specific policy statement is essential to demonstrate commitment by the company or organization to the TSM program. Then, the four-point approach seems ideal: plan, train, implement, evaluate.

The plan is necessary to have a blueprint on paper to follow. Training for the coordinators, up-to-date information and accessability to transit and ride sharing personnel, is equally vital. During the implementation period, a basic program such as that outlined on pages 49 and 50 is cost effective and time efficient. Naturally, each area of the country is different and may require different incentives.

During implementation, several things appear to be universal. These include a multi-faceted approach and new employee orientation. The mix of TSM strategies reinforce each other and offer maximum choice for employees. And, new employee orientation offers contact at the time a person is most likely to attend to their commute trip and mode.

The evaluation of results versus specific, quantifiable goals also makes for effective results. It is impossible to tell how effective a program is without before and after data to provide information on what has happened. The best on-going way of handling this situation would seem to be annual surveys.

If a businesslike approach is taken to a transportation problem, then businesslike results are likely to be achieved. If there are political, public and personal employee benefits to be had, then there is potential for a productive program. If that program is well organized and enthusiastically staffed, it can be successful.

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